CONSTRUCTION NEWS

Supplement to ENGINEERING NEWS. New York, June 27, 1907.

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CONSTRUCTION NEWS.

PLANS AND SPECIFICATIONS ON FILE.

(denotes that this work is advertised in Engineering News.)*

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RAILWAYS.

ARKANSAS EASTERN.—Company has been chartered with $112,000 capital to build a line 16 miles long from Big Creek to Earl, on the Iron Mountain Railroad. The directors and incorporators are J. E. List Edmiston, Will R. Flippo, D. F. Stalls, Louis Barton and L. P. Berry.

ARKANSAS, LOUISIANA & GULF.—We are officially advised that preliminary survey has been run from Pine Bluff, Ark., to Monticello by H. Levison; from Monticello to Rolfe Junction by G. W. Ely, and from Crossett, Ark., via Rolfe Junction, Ark., and Bostrop, La., to Monroe, La., by J. L. Polk. Location surveys are now being made under direction of A. H. Van Auken, Lonewa, La. All matters relative to construction are in the hands of J. M. Parker, Gen. Mgr., Masonic Temple, Pine Bluff, Ark. Line is to be 133 miles long, from Pine Bluff to Monroe, La., and nine miles from Crossett to Rolfe Junction. Motive power will be steam. Much right-of-way has been secured. Grading contracts have been let to J. HARRIS, Monroe, La., 3.6 miles, and to J. A. PUDUE & CO., Pine Bluff, Ark., 19.9 miles. Contract will be let immediately for grading 42 miles. Noted on May 16.

ATLANTA, BIRMINGHAM & ATLANTIC.—Contract has been let to the LANE BROS. CO. for constructing a line from Bessemer to Mulgay, Ala., 14 miles, work to be completed by March next. The track is to be of heavy construction. C. B. Wilburn, Brunswick, Ga., is Gen. Supt.

DENISON, BONHAM & NEW ORLEANS.—Right-of-way is stated to have been secured for this line from Ravenna eastward to the county boundary. The SOUTHERN RAILWAY CONSTRUCTION CO. has contract to complete the line within 21 months from Ravenna probably to Clarksville, Tex.

FENTRESS COUNTY.—Charter has been granted for this company to build a line from Johnson Stand, on the Southern Railway, in Cumberland County, to the Kentucky State boundary, via Fentress and Scott Counties. The incorporators are W. W. Wood, W. J. Goudin, W. L. Wright, Ward R. Case, S. E. Fogg, Travis Smith, P. S. Wood, T. J. Wright and S. P. Sterne.

FRIO VALLEY.—It is stated that surveys have been made by this company, recently incorporated in Texas to build a line from the Southern Pacific near Chatfield, Tex., north to Leakey, about 40 miles. Grading work is to be started early in August. Noted on May 30.

JOPLIN & PITTSBURG.—Incorporated to build a line in Missouri and Kansas 150 miles long. It will connect Joplin and Neosho, Mo., and Pittsburg and Columbia, Kan., with capital of $5,000,000. The directors are H. W. Noble, Detroit, Mich.; F. H. Fitch, Pittsburg, Kan.; D. R. Robinson, Buffalo, N. Y.; Joseph J. Heim, R. E. Richardson, and C. G. Hutchinson, of Kansas City, Mo.; Williams W. Calhoune and Thomas K. Irwin, Carthage, Mo. Joseph J. Heim is Pres.; J. A. Prescott, Secy.

KENTUCKY NORTH & SOUTH.—A line has been projected from Fullerton, Ky., on the Ohio River opposite Portsmouth, Ohio, south to Bristol, Tenn., about 250 miles, where connection is to be made with the Southern Railroad, surveys made for about half of the distance, and 85% of the right-of-way secured. E. S. Parsons, Springfield, Ohio, is making surveys.

KEWEENAW CENTRAL.—Contracts have been let to J. J. BYERS & CO., of Houghton, Mich., for extending the main line of this road from Mohawk, Mich., southwest to Calumet, six miles, and branches from Mandan to the Keweenaw Copper Co. mines, four miles, and from Phoenix to Eagle River, two miles.

LONG ISLAND.—We are officially advised that J. R. Savage, Ch. Engr., has awarded contract for seven miles of grading and concrete masonry for double-tracking on the North Division, between Flushing and Great Neck, to JOHN F. DOLAN, of Elizabeth, N. J.

MARION & SOUTHERN.—Reported that work will begin immediately on the proposed railroad from Marion to Bennettsville. Application has been made for a charter.

MISSOURI PACIFIC.—The Springfield-Crane branch of this road, recently finished, is to be extended north to the Missouri Pacific line at Bagnell, about 120 miles. Work, it is stated, will be started from the northern end at Bagnell next month. James W. Way is Consult. Engr., St. Louis, Mo.

MISSOURI & NORTH ARKANSAS.—Contracts have been let for constructing a 50-mile extension of this road from Seligman, Mo., to Joplin, to L. S. JOSEPH and M. C. BURT, of Leslie, Ark., and Cape Girardeau, Mo. On the extension from the southern end of the road at Leslie, Ark., southeast to Helena, it is expected to have grading finished this year to Searcy, 90 miles. Contracts for this work have been let to SCOTT & DALHOFF, of Neosho, Mo. Additional contracts probably will be let this year for the remaining section to Searcy, about 40 miles. W. S. Dawley is Ch. Engr., St. Louis, Mo.

NASHVILLE, SHELBYVILLE & DECATUR.—The charter of this company has been filed with the authorities. The road is to be 116 miles long, and its present capital stock is to be $50,000, to be increased at a later date. The incorporators are H. B. Cowan, R. W. Clark, J. F. Boyd, W. G. Hill, J. D. Hutton, V. S. Parsons, H. C. Dyer, all of Shelbyville; H. K. Bryson and W. Z. Dozier, of Fayetteville, and John F. Brock and W. R. Hall, of Decatur. The company will build a steam railway from Nashville to Murfreesboro, Rutherford County, thence southwest to Shelbyville, thence southeast to Fayetteville, thence south to Decatur, Ala. Here it will connect with the Southern Railway, the Memphis & Charleston and the Louisville & Nashville. In Giles County it will make connection with the proposed Nashville and Huntsville and also with the Cincinnati & Birmingham Air Line. At Nashville it will connect with the Southern and the Illinois Central. At Decatur it will connect with the Birmingham & Mississippi Southern, now in course of construction. It is proposed to build a low-grade road, with light grades and light curvatures. Seventy-pound steel rails will be used, also steel bridges and white oak ties.

OKLAHOMA & GOLDEN CITY.—John A. Griesel, Secy. of the Farmers' and Merchants' Industrial Club, Golden City, Mo., advises us that surveys and other preliminary work connected with construction of the proposed railroad between Pawhuska and Jeffersonville, Mo., and its branches, have been finished, and contracts probably will be let in July. The railroad will be 340 miles long. W. K. Palmer, Dwight Bldg., Kansas City, Mo., is Ch. Engr.

OPEN RIVER RY. & NAVIGATION.—E. W. McComas, Secy.-Treas., advises us that surveys have been completed, and right-of-way has been obtained for the proposed steam railroad of the above company. The road will be built between Holdman and Simmons Landing, 17 miles. The construction will consist mostly of earthwork. Contracts will be let about Oct. 1. C. E. Curry, Portland, Ore., is Pres.; C. E. MacComber is Ch. Engr., Pendleton.

OVERTON COUNTY.—It is expected to begin work on the northern extension of this railroad within six months. It will be 75½ miles long, and will connect with the Cincinnati Southern at or near Burnside, Ky. Ray Crow, of Livingston, Tenn., is Gen. Mgr. and Ch. Engr.

*PENSACOLA, ALABAMA & WESTERN.—Bids are asked until noon, July 10, by the Interstate Contract Co., 224 Brent Bldg., Pensacola, Fla., for grading about 40 miles of railroad. Work to be graded covers 20 miles of the Andalusia Division, and 20 miles of the Atmore Division. This road is to connect Pensacola and Memphis, via West Point. J. I. Miller is Ch. Engr.

PEOPLE'S RAILROAD.—Preliminary surveys have been made between Tyler and Canton, and right-of-way is being secured. A construction company with $250,000 or $300,000 capital is being organized to build the line. First construction will be between Tyler and Canton. John Durst is Vice-Pres., and W. Frank Knox, Secy. and Treas.

PENNSYLVANIA.—The company has a corps of engineers at work surveying the land between Winslow Junction, 25 miles below Camden, and Little Egg Harbor, with a view of constructing a direct 4-track line between the two points. Alex. C. Shand is Ch. Engr., Philadelphia.

RALEIGH & SOUTHWESTERN.—Contract has been awarded to JOHNSON & BRIGGS, of Richmond, Va., for grading the extension of this line, six miles, from the present terminus at the mouth of Soap Creek, in Raleigh County, W. Va., up that stream and into the valley of Winding Gulf Creek.

ROCKINGHAM & CASWELL.—This company, which proposes to build a line connecting Reidsville, Stoneville, Leaksville, Spray, Wentworth and Yanceyville, N. C., is making surveys and has secured a part of the right-of-way. H. A. Hayes, Secy., advises us that contracts will be let in about 60 days. R. T. Williams, Reidsville, N. C., is Pres.; R. E. Wysor, Reidsville, is Ch. Engr.

SOUTHERN PACIFIC.—Final surveys are being made on the proposed extension from Keller in Inyo County to Mojave, Los Angeles County, 120 miles. W. Hood, San Francisco, is Ch. Engr.

TEXAS CENTRAL.—This company, it is stated, will build a branch from either Dublin or DeLeon to Strawn or Thurber, Tex. H. S. McCall is Engr. at Waco, Texas.

ELECTRIC RAILWAYS.

NORTHFIELD, MASS.—We are officially advised that part of the right-of-way has been secured for the Greenfield, Bernardston & Northfield St. Ry. Co., which proposes to construct an electric railway through the towns mentioned in the name of the company. The road will be 15 miles long and the work will be new. Charles H. Webster, Northfield, is Pres.

AMITYVILLE, N. Y.—A 50-year franchise has been granted by the Village Board to the Huntington & Babylon R. R. Co. to build and maintain an electric road on certain streets. The company is required to build within two years, work to commence within 30 days.

LONG ISLAND CITY, N. Y.—The New York & Queens County Ry. Co. has decided to build some of its proposed extensions. The first of these, for which application has been made to the Board of Estimate and Apportionment, will run through Franconia Ave. from 22d to 31st Sts., Broadway-Flushing, and up 31st St. to Broadway, and out Broadway to Bell Ave. With the opening of the Belmont tunnels, with which this line will make direct connections, Flushing will have a 5-ct. fare to Manhattan. The certificate of the extension has been filed with the County Clerk and the Secretary of State. I. M. Tritt, Long Island City, is Supt.

MASONTOWN, PA.—A charter has been granted at the State Department to the Brownsville, Masontown & Smithfield Bridge Ry. Co. to construct 3½-mile line in Westmoreland County, starting at Masontown. The company is capitalized at $20,000.

ELKINS, W. VA.—The City Council has granted a franchise to the Elkins Electric Railway Co. The company expects to begin grading for the new road in about three weeks. The company elected J. C. McSpadden, of Rockwood, Pa., Pres.; J. E. Morgan, of Elkins, Vice-Pres., and W. J. Taylor, of Pittsburg, Secy. and Treas.

COLUMBIA, S. C.—A. E. Legare, Columbia, advises us that the South Carolina Public Service Corporation will resume work on surveys for its proposed road from Charleston to Columbia and through Piedmont section about Sept. 1. The road will be between 500 and 600 miles long. Work will be new and generally light. Contracts will be let about January, 1908.

LOUISVILLE, KY.—The Louisville & Northern Railway & Light Co., which recently completed a preliminary survey for an electric line from New Albany to French Lick and West Baden Springs, by way of Paoli, has placed a corps of surveyors at work to locate the route, and when this is completed the company will be ready to award the contract for the construction of the road. The company has made a preliminary survey for a branch line from a point four miles north of New Albany, west to Corydon, but it is probable that the work on the main line will be completed before work on the Corydon branch is commenced.

LA FAYETTE, IND.—Work probably will be started on construction of the La Fayette & Chicago Electric Ry. in about two months. G. W. Infield is Pres.

WASHINGTON, IND.—The construction work on the Washington and Martinsville traction line will begin at once. The grading will be started from Washington and worked northward toward Martinsville. The line will run to Bloomfield and thence to Martinsville. E. J. Wilson is Ch. Engr.

NEW ALBANY, IND.—Bids will be received soon by the Louisville, New Albany & Southern Traction Co. for constructing its proposed road between New Albany and French Lick.

EVANSVILLE, IND.—The Evansville & Boonsville Traction Co. will extend its line from Boonville to Chrisney, and it is expected the survey will be begun at once. Later the road may be extended from Chrisney to Cannelton through Tell City and Troy. The Mt. Vernon branch of the Evansville & Terre Haute Railroad, extending from Fort Branch to Mt. Vernon, will be ballasted the entire length, and new steel rails will be laid over the entire route. The road will be practically new when the improvement is completed.

LEBANON, ILL.—Contracts will be let soon by the Carlyle & St. Louis Electric Ry. Co. The line which it is proposed to construct will extend from Carlyle to Lebanon and will be 23 miles long. The company has been incorporated in Illinois as an extension of the East St. Louis & Suburban Railroad Co. Julius S. Walsh, Jr., St. Louis, Gen. Mgr.

MARENGO, IOWA.—The Marengo & Midland Ry. Co. has completed its survey to Cedar Rapids, and this work is now done from Cedar Rapids to Oskaloosa via Marengo, Genoa Bluffs, Millersburg, Deep River and Montezuma, Iowa. A part of the right-of-way has been secured. Arrangements for financing this company have been concluded.

MINNEAPOLIS, MINN.—We are advised by E. W. Farnham, Pres., Twin City & Lake Superior Ry. Co., Minneapolis, that contracts are being let for construction of an electric railway from Minneapolis and St. Paul to Lake Superior, at Duluth. All surveys have been completed and right-of-way obtained. The road will be 130 miles long, the work new and light. H. W. Albery, Minneapolis, is Ch. Engr.

MANKATO, MINN.—W. L. Hixon, Mankato, writes us that contracts will be let immediately for constructing about six miles of new railway in Mankato for the Mankato Electric Traction Co. Work on surveys has been completed and right-of-way and capital for construction have been obtained. Noted on May 23.

KANSAS CITY, MO.—A crosstown line is to be constructed by the Metropolitan St. Ry. Co. to the East Bottoms along Chestnut St. An ordinance has been passed for the extension of the Prospect line south from 31st St. to connect with the Swope Park line at 38th St. To make the line complete, an ordinance is pending for the extension of the Prospect line north from 15th on Chestnut St., through the canyon in North Terrace Park, with a subway under the Cliff Drive and crossing the railroad tracks on a viaduct. The cost of the grade in the North Terrace canyon will be $48,000. Charles N. Black, Kansas City, is Gen. Mgr. and Ch. Engr.

OKLAHOMA CITY, OKLA.—The Citizens' Street Ry. Co. of Oklahoma City has been chartered, capital $100,000. The incorporators are J. S. Culbertson and J. S. Leclerq, of Paris, Tex.; W. F. Harn, R. Q. Blakeney and J. F. Winans, of Oklahoma City.

SEATTLE, WASH.—The City Council has granted a franchise to the Seattle Electric Co. for extension of its line along East and North 45th St. The new line will connect the Green Lake and University lines. Stone & Webster, 84 State St., Boston, Mass., are Gen. Mgrs.; H. F. Grant, Seattle, is Local Mgr.

KLAMATH FALLS, ORE.—E. J. Murray, of Klamath Falls, writes us that the right-of-way for the line of the Inland Electric Ry. Co., lately incorporated, with a capital of $25,000, is being secured. Contracts will be let after this work has been completed. The line will be run from Klamath Falls to Bomaza, Yanna and Merrill.

LAKEPORT, CAL.—W. S. Fry, Secy. of the Sonoma & Lake County Ry. Co., writes us that it is the purpose of the company to construct an electric railway from Cloverdale to Lakeport, with a branch to Kelseyville. Survey has been made and right-of-way secured from Lakeport to Cloverdale, a distance of 27 miles, with a maximum grade of not over 3%. The profiles and maps are being made out, and it is the intention to begin work on the road soon. Noted on May 9.

LOS ANGELES, CAL.—An ordinance has been adopted by the Supervisors granting the South Park & East Side Railroad Co. a franchise on the El Cajon Road, from the east boundary of the city to the La Mesa Springs town site. The track is to be laid on the north side of the road, and may be single or double. A 1-hour service is required. The power will be either electricity or gasoline motors. Two per cent. of the annual gross receipts will go to the county after the first five years. M. L. Wyneken, San Diego, Cal., is Ch. Engr.

VALLEJO, CAL.—The Vallejo & Northern Electric Ry. Co. has had a party of surveyors laying out the line of the road on Second St., in this city. The passenger depot and ticket office will be located at the corner of Main and Second Sts. It is expected that the company will commence construction of the road from Vallejo to Cement, and then will proceed on to Cordelio, Winters and Woodland. At Cement one branch of the road will be built to Sacramento. Melville Dozier, Jr., is now making an effort to secure a franchise from the City Council of Sacramento to lay the tracks of the road in that city.

COEUR D'ALENE, IDAHO.—Plans have been filed at the U. S. Land Office by the Spokane, Wallace & Interstate Electric Ry. Co., which proposes to connect Coeur d'Alene with Wallace, a distance of 51 miles, with an electric line. The route runs along the east shore of Lake Coeur d'Alene to Wolf Lodge Bay, thence east to Coeur d'Alene River, about three miles west of Rose Lake, thence following the river to Wallace. The divide requires a 4,000-ft. tunnel. For two miles on each side of the divide the grade is the greatest, being 20%. The balance is 10% or less. Grading will begin Aug. 15. Camps will be established at Coeur d'Alene and at the middle point of the road, the former point being the supply center for food and machinery.

ST. CATHARINES, ONT.—Among the extensions to be built by the Niagara, St. Catharines & Toronto Ry. Co. the present season are those from St. Catharines to Niagara-on-the-Lake, Welland and Grimsby Park. The electric line is to be extended from Niagara Falls to Fort Erie. E. F. Seixas, St. Catharines, is Gen. Mgr.

LIGHT AND POWER PLANTS.

(denotes that this work is advertised in Engineering News.)*

NORWICH, CONN.—The Consolidated Ry. Co. has awarded contract for laying submarine power cable under Thames River, at this place, to the T. A. SCOTT CO., of New London. The cable will effect a connection between the company's power plant at Thamesville and the electric railway system at Central Village.

NEW YORK, N. Y.—Bids are asked by the Department of Education, C. B. J. Snyder, Supt. of School Bldgs., until 11 a. m., July 8, for (A), installing electric light, wiring, fixtures, etc., in Public School No. 54, on east side of Walworth St. and west side of Sanford St., about 112 ft. south of Myrtle Ave.; also for installing bell and telephone systems in Public School No. 116, on east side of Knickerbocker Ave., between Grove and Ralph Sts., Boro. of Brooklyn; (B), additions to and alterations in the electric bell system of Public School No. 86, on 96th St. and Lexington Ave., Boro. of Manhattan; (C), installing electric equipment in addition to and alterations in Public School No. 13, on west side of Anderson St., between Pennsylvania and Clifton Aves., Rosebank, Boro. of Richmond.

The following bids have been received for installing electric equipment in new Public School No. 38, on Elm Ave., Fresh Pond Road and Halsey St., Boro. of Queens: L. F. Benn, 725 Broadway, New York, $8,298; Griffin & Co., 150 Nassau St., New York, $7,947, and T. F. Jackson, 592 Columbus Ave., $8,550.

*WEST POINT, N. Y.—Bids are asked by the Quartermaster until noon, July 16, for furnishing and installing steam piping for power-house and distributing system.

BUFFALO, N. Y.—The Buffalo & Lake Erie Traction Co. has let contract to the GENERAL ELECTRIC CO., of Schenectady, N. Y., for constructing power plant at Athol Springs, to be completed August 15.

PHELPS, N. Y.—The Niagara Falls, Lockport & Ontario Power Co., Fidelity Bldg., Buffalo, is reported to have decided to petition the Village Trustees for a franchise in Phelps.

CANANDAIGUA, N. Y.—The Ontario Light & Traction Co. is planning to make extensive repairs and improvements to its plant, which will involve an expenditure of about $30,000. The company now furnishes electricity for lighting Canandaigua, Shortsville and Manchester. J. H. Pardee, Canandaigua, is Gen. Mgr.

STANHOPE, N. J.—A company composed of local and outside capitalists organized by D. M. Cook, of Newark, has purchased the plant and holdings of Edward T. Willis in this place. The plant furnishes electricity for lighting Stanhope and Netcong. The new company will soon file articles of incorporation.

PITTSBURG, PA.—An ordinance has been introduced in the Council, granting a franchise to the Diamond Light & Power Co. to erect poles and to string wires for the transmission of electric current for heat, light and power purposes. Frank McCann is reported interested.

BRADFORD, PA.—Bids are asked until July 15 for 141 all night street lights; contract to commence June 13, 1908. Edwd. C. Charlton is City Clk.

HUNTINGTON, W. VA.—The Columbia Gas & Electric Co. is planning to begin construction of its proposed pipe lines for conveying gas from West Virginia to Kentucky and through Ohio to Cincinnati, Cleveland, and other cities. The company recently awarded contract to the NATIONAL TUBE CO., general offices at Lorain, Ohio, for 130 miles of 10 to 29-in. piping. Estimated cost, $5,000,000.

WILMINGTON, N. C.—The Tidewater Power Co., R. M. Sheppard, Secy. and Treas., will take over control of the Consolidated Rys., Light & Power Co. and make extensions into suburbs of city, and bring in electric power from plant of Rockingham Power Co., a distance of 116 miles.

MERIDIAN, MISS.—The Meridian Light & Power Co. proposes to amend its charter authorizing an increase in capital stock from $1,000,000 to $2,000,000. The company is contemplating extending the street railway and lighting systems.

BATON ROUGE, LA.—The Baton Rouge Electric & Gas Co. has been reorganized under the name of the Baton Rouge Electric Co., and the capital stock of the new company is placed at $750,000. The officers of the company are: George Tripp, of Boston, Mass., Pres.; Edward Codchaux, of New Orleans, Vice-Pres.; A. K. Todd [illegible] and A. S. Pratt, Treas. Stone & Webster, Boston, Mass., are interested in the company, which will make extensions and improvements and additions to the present plant.

FRANKLIN, LA.—MURALT [illegible] Liberty St., New York, N. Y., has the contract for constructing [illegible] plant for $28,000. The other [illegible] Henry Weidiner, New Orleans, and A. M. Lockett & Co., [illegible] $33,000.

SHREVEPORT, LA.—At a [illegible] of the City Council, Adkins [illegible] city, were granted a franchise [illegible] natural gas at a rate not to [illegible] per 1,000 ft.

BRISTOL, TENN.—The organization of a distributing electric light and [illegible] pany has been completed with the following officers: J. D. Mitchell, Pres.; [illegible] stead and J. B. Baumgardner, Vice-Pres.; Theodore Swann, Secy. and Treas. The company proposes to purchase from the [illegible] company, financed by Charles [illegible] and associates, of Petersburg and [illegible] the electric power which will be [illegible] Fish Dam on the Holston River, [illegible] from Bristol. Charles Hansell & [illegible] York, are Engrs. The company will build a 60-ft. dam and develop [illegible] H.P.

ARLINGTON, OHIO.—Bids are [illegible] til July 9 for construction of [illegible] plant. Estimated cost, $8,000. [illegible] 619 Nasby Bldg., Toledo, is Engr.

PLYMOUTH, IND.—The Plymouth [illegible] Co., recently incorporated, will [illegible] and equip a lighting plant in this city. [illegible] Eminmiling, P. A. Neuffer and L. P. [illegible] are Directors.

BEDFORD, IND.—Plans are being prepared by Bert Baldwin & Co., Perin Bldg., Cincinnati, Ohio, for power plant addition to the plant of the United States Portland Cement Co., at Bedford, which will include an 800-KW. turbine and one of 100 H.P.

NEGAUNEE, MICH.—It is proposed to increase the capacity of the municipal electric light plant by installing turbo generator set of 500 KW. capacity and extra boilers. H. F. Pearce is Supt.

HOUGHTON, MICH.—Plans are being prepared by E. T. Sykes, of Minneapolis, Electrical Engr., for constructing a municipal lighting plant, and the same will be presented to the Board of Public Works.

MENOMINEE, MICH.—The Hydro-Electric Water Power Co. proposes to erect power plant on the Peshtigo River.

CHICAGO, ILL.—Bids are asked by William Carroll, City Electrician, Room 12, City Hall, until June 29 for furnishing, erecting, and installing four 500-KW., single-phase, 60-cycle oil insulated step-down transformers at the municipal electric light power station at Fullerton Ave.; also for furnishing, erecting and installing switchboards and accessories, including all the various meters, meter starting panels, oil switches, other switches, lightning arresters, with other necessary equipment, in accordance with specifications: One switchboard to be set up at the municipal electric light station located at 200 South Halsted St. to provide for two 1,200-HP. motors and equipment; also one to be set up in the station located at Rice and Lincoln Sts. to provide for one 1,200-HP. motor and equipment, and also one to be set up in the Wentworth Ave. station to provide for one 1,200-HP. motor and equipment.

DE KALB, ILL.—The De Kalb-Sycamore Electric Co. contemplates extending and improving its plant, which include installation of boilers of 800 HP. and 120-ft. stack. The company will also install a vaccum system for handling coal and ashes.

PEORIA, ILL.—Plans are being made by the Peoria Gas & Electric Co. for improvements to its plant and system in this city, which will involve an expenditure of about $300,000. Plans and specifications are being prepared for the new underground conduit system, for which contracts for construction will be awarded soon. Emil G. Schmidt is Mgr.

FREDONIA, KAN.—The Fredonia Ice Co. is contemplating installing an electric plant to furnish electricity for lighting the town.

BILLINGS, MONT.—The Peterson Heat, Light & Water Co., of Chicago, Ill., is reported interested in the construction of a central heating plant in Billings. Estimated cost, $100,000.

NAPA, CAL.—W. J. Linddow has been granted a franchise to erect and maintain an electric light system in this city.

UKIAH, CAL.—Bids are asked by the Board of Trustees until July 13 for purchase of franchise of the Snow Mountain Water & Power Co. to erect and maintain tranmission line in the town of Potter Valley. W. V. Kilbourne is Clk.

ST. HELENA, CAL.—Bids are asked by the Board of Trustees, G. W. Schmidt, Pres., until July 9, for sale of franchise that has been applied for by Henry Brown, for a period of 50 years, for transmitting electricity for light and power.

BRIDGES.

(denotes that this work is advertised in Engineering News.)*

MEDFORD, MASS.—We are officially advised that the AUSTIN ENGINEERING & CONSTRUCTION CO., Boston, Mass., has been awarded contract for constructing additional span to Cradock bridge and boat lock at Main St., Mystic River Reservation, Medford, at $39,015. Jones & Meehan, Boston, bid $52,750. John R. Rablin is Engr. Metropolitan Park Comn. Itemized bids are given this week under Contract Prices.

CANANDAIGUA, N. Y.—The Town Board has let contract to G. T. DARROW, of New Berlin, N. Y., for constructing concrete arch bridge across Haskell gully, for $4,800.

NIAGARA FALLS, N. Y.—The International Ry. Co. will erect a steel bridge across the New York Central R. R. cut near Devils Hole at the whirlpool.

*LAUREL SPRINGS, N. J.—Bids are asked by the Board of Chosen Freeholders, at Camden, N. J., by George W. Whyte, Chn., until 11 a. m., July 8, for constructing highway bridge over Mills Lake, at Laurel Springs. Fred. W. George is Clk. J. J. Albertson is County Engr.

ALLENTOWN, PA.—The Board of Directors of the High Valley Transit Co. recently decided to construct bridge between Allentown and Allentown. The bridge will be 1,820 ft. long and will span a ravine 115 ft. deep. Estimated cost, $350,000.

McKEESPORT, PA.—The Port Vue Bridge Co. has let contract to the DRAVO CONSTRUCTION CO. for constructing steel arch bridge across the Baltimore & Ohio R. R. tracks at 15th Ave. and Walnut St. Cost, $150,000.

HARLEIGH, PA.—The County Commissioners have let contract for constructing iron bridge at Harleigh to the WILKES-BARRE CONSTRUCTION CO.

WASHINGTON, D. C.—The District Commissioners have awarded to JAMES J. OVERN, Washington, contract for construction of steel and concrete bridge over the Baltimore & Ohio R. R., near Washington, at $13,700.

WILLIAMSPORT, MD.—The Board of County Commissioners have granted permission to the Washington & Berkeley Bridge Co. to erect a toll bridge across the Potomac River at Williamsport.

CULPEPER, VA.—Bids are asked until July 20 by the County Commissioners, W. E. Coons, Clk., for construction of two steel bridges.

PARIS, KY.—Bids are asked by C. F. Redmon, Turnpike Superv., until noon, June 29, for constructing stone or concrete abutment for bridge across Indian Creek on the Millersburg and Cynthiana turnpike.

WARREN, OHIO.—The County Commissioners have let contract to the MASSILLON BRIDGE CO. for constructing the Farmington bridge. The OREGONIA BRIDGE CO. secured the contract for constructing the Lordstown bridge.

WAPAKONETA, OHIO.—Bids are asked by the Board of County Commissioners until 11 a. m., July 12, for constructing two bridges across Auglaize River, one in Duchouquet Township and other in Logan Township. W. H. Meyer is County Audr.

JEFFERSON, OHIO.—Bids are asked by the County Commissioners until 1 p .m., July 15, for constructing superstructure of steel bridge across Conneaut Creek in Conneaut Township.

CLEVELAND, OHIO.—Carland & Hecker, at $68,220, are lowest bidders for constructing substructure of the Kinsman Road bridge and will probably be awarded the contract by the Board of Public Service. W. J. Carter is City Engr.

TOLEDO, OHIO.—A steel bridge will be constructed by the city and the Toledo Urban and Interurban Electric Ry. Co., of which Chas. Kilgour, of Findlay, is Ch. Engr. Cost, $22,500.

JEFFERSON, OHIO.—The CHAMPION BRIDGE CO., Wilmington, Ohio, has secured the contract for constructing superstructure of bridge across Paint Creek, near Jeffersonville, at $5,558.

POINT PLEASANT, OHIO.—The contract for constructing channel span of the Kanawha & Michigan R. R. bridge over Ohio River has been secured by the MOUNT VERNON BRIDGE CO., of Mount Vernon, Ohio. The span will be 400 ft. long and cost $95,000.

CINCINNATI, OHIO.—Bids are asked by the County Commissioners, Fred. Dreihs, Clk., until noon, July 12, for: Under Specifications No. 636, repair of culvert on Whisky Run Road, about ½ mile west of Winton Road, Springfield Township.

COLUMBUS, IND.—The Columbus Ry. & Light Co. has awarded contract to construct the How Creek bridge to the LAFAYETTE BRIDGE & ENGINEERING CO., of Lafayette.

ELKHART, IND.—A bridge will be built across St. Joseph River by Cleveland and Concord Townships, on the township line.

FOWLER, IND.—Bids are asked by the County Commissioners until July 1 for constructing two concrete abutments for bridge No. 12. Lemuel Shipman is County Audr.

BROWNSTOWN, IND.—Bids are asked by the County Commissioners until July 1 for constructing bridge substructure on Medora and Parksville Road. H. W. Wacker is County Audr.

EAST ST. LOUIS, ILL.—A viaduct 80 ft. long will be constructed over Cahokia Creek at Broadway. W. J. Crocken is City Engr.

*MT. PULASKI, ILL.—Bids are asked by the Lake Fork Special Drainage District Commissioners until 1 p. m., July 15, for constructing five steel bridges.

GRANTSVILLE, WIS.—A toll bridge will be constructed by the Grantsville Bridge Co., S. P. Bell, Secy., across Little Kanawha River. The bridge will be of iron, 250-ft. span and 20 ft. wide. Cost, $18,000.

FLAMBEAU, WIS.—A bridge will be constructed over the Flambeau River in Rusk County.

BOSCOBEL, WIS.—The contract for constructing rock bridge has been let to Wm. McCORD.

GRAND FORKS, N. DAK.—Three bridges will be constructed in Rye Township.

FLORESVILLE, TEX.—Three iron bridges will be constructed in Wilson County, one across San Antonio River, one across Cibolo Creek, and the other across Dry Hollow.

BRYAN, TEX.—An iron bridge will be constructed across Brazos River, between Brazos and Burleson Counties, at Koppes Ferry. Cost, $15,000.

HOUSTON, TEX.—A. N. FITZGERALD has been awarded contract for constructing bridges across Cedar Bayou and Shell Gully.

LINDSAY, IND. T.—The Lindsay Bridge Co. has let contract to the KANSAS CITY BRIDGE CO., Kansas City, Mo., for constructing three steel bridges across Washita River. Total cost, $8,200.

GRANTS PASS, ORE.—Bids are asked by the County Court until July 5 for retimbering Rogue River bridge and constructing steel bridge.

KELSEYVILLE, CAL.—Bids are asked by the Board of Supervisors, Shafter Mathews, Clk., until 1 p. m., July 1, for constructing 300-ft. 2-span steel bridge across Kelsey Creek.

RED BLUFF, CAL.—Bids are asked by H. G. Kuhn, Clk. Bd. of Supervs., until 2 p. m., July 2, for constructing 134-ft. wooden bridge across Salt Creek, on the Tuscan Springs Road, five miles east of Red Bluff.

MADERA, CAL.—Bids are asked by the Board of County Supervisors, W. R. Curtin, Clk., until 10.30 a. m., July 8, for constructing bridge.

DOWNIEVILLE, CAL.—Bids are asked by the Board of County Supervisors, Henry E. Quigley, Clk., until 10 a. m., July 1, for constructing wooden bridge across Sardine Creek.

RATHDRUM, IDAHO.—Bids are asked by the County Commissioners, Ignatz Weil, Clk., until July 8 for erecting bridge across Moore Creek.

HALIFAX, N. S.—The LINDSAY CONSTRUCTION CO. has been let contract for constructing steel bridge at Halifax, for Mackenzie & Mann, on the Halifax and South Western Ry.

TORONTO, ONT.—DICKSON BROS. have been awarded contract for erection of steel bridge over Spanish River, at $20,000.

The ONTARIO BRIDGE CO. has been awarded contract to build steel bridge over Aux Sable River between McGillivray and Stephen.

CALGARY, ALTA.—E. D. STIMPSON, of Calgary, has received the contract for building three bridges. One is to be built over Iron Creek, north of Sedgewick.

BUILDINGS.

(denotes that this work is advertised in Engineering News.)*

BOSTON, MASS.—The Trustees of the Museum of Fine Arts are to erect a building to replace the present museum on Copley Sq. The building will be built in the Fenway, on Huntington Ave. It is estimated that the museum will cost about $400,000.

SALEM, MASS.—The Essex County Commissioners have awarded the contract for the work of constructing the new Registry of Deeds and Probate building at Salem to the WOODBURY & LEIGHTON CO., 166 Devonshire St., Boston, for $339,339, the work to be completed within 17 months. The main building on Federal St. will be of granite front and ends, with the L running toward Bridge St. of gray brick with granite trimmings. The building will have two stories, 208 × 140 ft. Clarence H. Blackall, 20 Beacon St., Boston, is Arch.

NEW HAVEN, CONN.—The contract for the new Roman Catholic Hospital to be built on Chapel St. has been awarded to the DAVID H. CLARK CO., 166 Brewery St. Cost, $140,000.

NEW YORK, N. Y.—The following bids were received by C. B. J. Snyder, Supt. School Bldgs., New York, (a) for installing heating and ventilating apparatus for addition to and alterations in Public School No. 39, on the corner of State St. and Roanoke Ave., Far Rockaway, Boro. of Queens; (b) for installing heating and ventilating apparatus for new Public School No. 152, on south side of Ave. G, between East 23d and East 24th Sts., Boro. of Brooklyn; (c) for installing heating and ventilating apparatus for additions to and alterations in Public School No. 23, on the corner of Whitestone Ave. and State St., Flushing, Boro. of Queens; Frank Dobson, 319 East 53d St., (a) $38,750, (b) $39,919; Blake & Williams, 211 West 20th St., (a) $34,532, (b) $36,746; Gillis & Geoghegan, 537 West Broadway, (a) $31,485, (c) $15,000; E. Rutzer & Co., 127 White St., (a) $36,833, (b) $35,275, (c) $16,179; R. J. Sovereign & Co., 63 Fifth Ave., (a) $34,900, (b) $39,621, (c) $15,600; Isaac B. Merritt, 48 Cliff St., (c) $15,150; W. J. Olvaney, 177 Christopher St., (c) $16,463.

Clinton & Russell, Archs., 32 Nassau St., have filed plans for the 25-story Goldsmiths and Silversmiths' Building to be erected by Edward Holbrook at 15 to 19 Maiden Lane, extending through the block to 18 and 22 John St. The estimated cost of the structure is $750,000.

NEW YORK, N. Y.—Bids are asked by Francis J. Lantry, Fire Comr., until 10.30 a. m., July 2, for erection of an extension to the headquarters building on the southerly side of 68th St., 150 ft. west of Third Ave., Manhattan; also erection of a building for an engine and a hook and ladder company on the westerly side of Belmont Ave., 200 ft. south of 183d St., the Bronx.

Bids are asked by the Park Board until 3 p. m., July 3, for erection of a new continuous skylight in the main roof of the east wing, the enlargement of the three dome lights over the hall of sculpture and the alteration of the cornice in the south gallery on the second floor of said east wing of the Metropolitan Museum of Art, located in Central Park, on the west side of Fifth Ave. opposite 82d St.

Bids are asked by C. B. J. Snyder, Supt. School Bldgs., until 11 a. m., July 8, for alterations, repairs, etc., to Public Schools Nos. 16, 34, 51, 55, 57, 90, Boro. of Brooklyn, for installing heating and ventilating apparatus in Public School No. 94, on westerly side of Sixth Ave., between 50th and 51st Sts., Boro. of Brooklyn; for the general construction, etc., of new Public School No. 157, on Taaffe Pl. and Kent Ave., about 247 ft. south of Park Ave., Boro. of Brooklyn; for installing heating and ventilating apparatus in new Public School No. 43, on westerly side of Brown Pl., between 135th and 136th Sts., Boro. of the Bronx; for general construction, etc., of new Public School No. 28, on the southwest corner of Centre St. and Garretson Ave., Richmond, Boro. of Richmond.

NEW YORK, N. Y.—The following bids were received June 19 by John F. Ahearn, Pres. Boro. of Manhattan, for labor and material required (except for plumbing work) for the erection and completion of a public bath building at Nos. 5 and 7 Rutgers Pl., Boro. of Manhattan, (a) Item 1, (b) Item 2: John H. Parker, 225 Fourth Ave., (a) $179,375, (b) $270; Calumet Construction Co., 15 East 59th St., (a) $168,621, (b) 1 ct.; Patrick Gallagher, 1183 Broadway, (a) $156,900, (b) $2; S. D. Davis, New York, (a) $197,900 (b) $1.75; Kelley & Kelly, 45 East 42d St., (a) $176,751, (b) 10 cts.; Luke A. Burke & Son, 25 West 42d St., (a) $178,200, (b) 20 cts.; T. J. Waters, Park Ave. and 125th St., (a) $181,498, (b) $1.50; F. T. Nesbit Construction Co., 116 Nassau St., (a) $159,400, (b) $2.

The following bids were received for labor and materials required for installation of plumbing work in a public bath building to be erected at Nos. 5 and 7 Rutgers Pl., Boro. of Manhattan, (a) Item 1, (b) Item 2: J. J. Cook, Fort Clay St., (a) $28,700, (b) $8; J. P. Levitt, 73 East 105th St., (a) $23,000, (b) $1.50; Christopher Nally, 2384 Broadway (a) $25,648, (b) 10 cts.; J. T. Kenney, 294 West 23d St., (a) $28,000, (b) $7; M. J. O'Brien, 2142 Broadway, (a) $24,900, (b) 75 cts.; George E. Gibson, 511 Park Ave., (a) $26,973, (b) $3.50; Kenney Renner Co., 135 West 24th St., (a) $22,830, (b) 1 ct.; John Spence, Jr., 131 East 18th St., (a) $25,817, (b) $8; Bryne & Murphy, 800 Park Ave., (a) $22,500, (b) $4.

LONG BEACH, (L. I.), N. Y.—A hotel to cost $1,000,000 is to be erected here by Jason Waters, of the Windsor Hotel, Atlantic City, N. J. The hotel will be built of reinforced concrete, and will accommodate 1,500 guests. It will cover the two blocks known as 102 and 89. The former measures 760 × 350 × 300 × 760 ft., and the latter 150 × 760 x 250 × 760 ft. This property extends 1,500 ft. along the Boardwalk.

BUFFALO, N. Y.—The Franciscan Fathers Minor Consistory has filed plans with the Bureau of Buildings for a church building of brownstone at Clark and Lovejoy Sts. Estimated cost, $180,000. Schmill & Gould are Archs., 400 Law Exchange Bldg., Buffalo.

ALBANY, N. Y.—The directors of the First National Bank have decided to adopt the plans of Marcus T. Reynolds, Arch., 100 State St., Albany, for the building to be erected by the bank on State St. The structure will be six stories in height, and will be constructed of white marble. The first and second stories with the mezzanine floor will be used for the bank's quarters, and the upper floors will be devoted to offices for rental. The estimated cost of the building is $100,000. Frederick A. Mead, Albany, is Pres. of the bank.

TRENTON, N. J.—Plans have been completed by S. Roberts, Arch., 1524 Chestnut St., Philadelphia, Pa., for a 3-story stone and brick, fireproof city hall for Trenton. Estimated cost, $800,000. Bids will be received in about three weeks.

PHILADELPHIA, PA.—CRAMP & CO., Commonwealth Bldg., Philadelphia, have been awarded a contract by Ballinger & Perrot for a warehouse to cost $100,000 for the Smith, Kline, French Co., at Fifth and Appletree Sts. The plans provide for a 6-story fireproof structure to measure 50 × 90 ft.

PITTSBURG, PA. — Rutan & Russell, Archs., 255 Fifth Ave., Pittsburg, have awarded to the HENRY SHENK CO., Lewis Block, the contract for a 6-story brick and terra cotta store building which will cost about $300,000. The building will be 110 × 120 ft. at Carson and 26th Sts., Southside, and will be occupied by the stores of the Mercantile Co., a subsidiary concern of the Jones & Laughlin Steel Co.

PITTSBURG, PA.—Palmer & Hornbostel, Archs., 63 William St., New York, and 517 Empire Bldg., Pittsburg, have completed plans for additional buildings for the Carnegie Technical Schools, Schenley Park, Pittsburg, which are to conform with other building already constructed. Cost, $1,000,000.

*WILKES-BARRE, PA.—Bids are asked until 2 p. m., July 18, by James M. Norris, County Controller, for constructing the ventilating and heating system of the new court-house, now being erected for the County of Luzerne at the corner of North River and North Sts., Wilkes-Barre.

WASHINGTON, D. C.—Bids were received as follows June 22 at the office of the Secretary of the Interior, Washington, D. C., for the construction of an amusement hall at the Government Hospital for the Insane, Washington: Brennan Construction Co., 3056 K St., N. W., Washington, $113,000; Arthur Cowsill, Colorado Bldg., Washington, D. C., $113,000; Cramp & Co., Commonwealth Bldg., Philadelphia, $108,000.

The Constructing Officer in charge of work at the Soldiers' Home, Washington, has awarded to JOHN W. DANFORTH, 70 Ellicott St., Buffalo, N. Y., contract for the installing of the hot water distribution system at the Soldiers' Home, Washington, at $195,475.

Albert Kelsey, 931 Chestnut St., Philadelphia, and Paul P. Cret, of Philadelphia, have been selected as architects to design the new building for the International Bureau of American Republics, in Washington. The building, which will be situated on a plot of ground bounded by 17th, 18th, B and C Sts., will be of stone, thoroughly fireproof. It will consist of four sections, respectively, to be known as administration, library, assembly and service. It will cost $900,000.

The Chamber of Commerce has decided to erect its own building at a cost not to exceed $400,000.

FAIRMONT, W. VA.—Plans for the proposed post-office and Masonic temple here have been completed by Baldwin & Pennington, Professional Bldg., Baltimore, Md. The plans call for a 5-story building, 55 × 109 ft. The exterior will be finished in buff colored brick, with terra cotta trimmings, resting on a gray granite base. The exterior will be plain. The basement will contain space for offices facing on the side street. The first story is to be devoted entirely to the use of the post-office. The post-office will be finished with marble floors, wainscoting, counter, etc., on top of which will be placed the bronze and glass screen separating the public from the clerical departments. The entire building is to be fireproof, constructed with concrete columns and floors and terra cotta partitions, finished with a tile roof.

SAVANNAH, GA. — The Citizens' and Southern Bank has awarded contracts as follows for construction of bank building to be erected at cost of $215,000: General contractor, MILES & BRADT CO., 800 Austell Bldg., Atlanta, Ga.; Georgia marble cut and set, B. A. & G. N. WILLIAMS, New York, N. Y.; vaults, DIEBOLD SAFE & LOCK CO., Canton, Ohio. The building is to be two stories high, fireproof, 50 × 130 ft., open on four sides. Steam heat and electric lighting will be used. Plans were prepared by Mowbray & Uffinger, 92 Liberty St., New York, N. Y.

ATLANTA, GA.—Atlanta Auditorium-Armory Co. has adopted plans by Morgan & Dillon, Archs., Prudential Bldg., for erection of proposed auditorium and armory, which will have four stories and will be built of brick, 200 × 300 ft., with steel roof, floors of wood and concrete where practicable. Seating capacity of entire structure, 8,500. Arena, 150 × 90 ft. Cost, about $200,000.

ROANOKE, ALA.—Bids are asked by the Atlantic & Birmingham Construction Co. until July 1 for construction of a combination freight and passenger station to be built of concrete on the Atlanta, Birmingham & Atlantic R. R., at Roanoke, Ala.

CHATTANOOGA, TENN.—R. H. Hunt, a local architect, has been selected to draw the plans for the new $300,000 city hall. The new building will have three stories with half basement and will cover an area of 110 × 100 ft. on Eleventh St. The exterior finish will be of stone.

FORT WAYNE, IND.—Plans are being prepared for a hotel to cost $250,000, to be erected at Berry and Harrison Sts. Louis F. Curdes is interested.

*OWOSSO, MICH.—Bids are asked until 3 p. m., July 31, by James Knox Taylor, Superv. Arch., Washington, D. C., for constructing U. S. post-office at Owosso.

CHICAGO, ILL.—Arrangements have been completed for erecting a hotel at La Salle and Madison Sts. The building will be 22 stories high. It will contain nearly 14 acres of floor space, and will have 1,150 rooms. It will cost between $2,500,000 and $3,000,000. It is planned to have it completed in fifteen months.

CHICAGO, ILL.—The LANQUIST & ILLSLEY CO., 393 North Clark St., has the general contract for an addition to be built at 87 and 89 South Franklin St. to the headquarters of the Chicago Telephone Co., 203 Washington St. The addition will be 8 stories high, L-shaped, of steel construction, with pressed brick and terra cotta exterior, composition roof, hardwood finish, steam heat, electric light, marble and tile work, elevators, and cost about $300,000.

CEDAR RAPIDS, IOWA.—We are officially advised that BARTLETT & KLING, Cedar Rapids, have secured contract to construct an 8-story fireproof office building for the Security Savings Bank.

MINNEAPOLIS, MINN.—Shepley, Rutan & Coolidge, Ames Bldg., Boston, Mass., are finishing plans for a blue limestone Gothic church for the Plymouth Congregational Church, J. B. Kingman, Chn. Bldg. Com. It will be built on Vine Pl. and 19th St. Bids will be advertised by the congregation about June 15. Cost, $150,000.

Long & Long, Archs., Henn. Ave., are preparing for a 15-story pressed brick, cut stone and reinforced concrete fireproof office building for J. E. Andrus, Minneapolis. It will be 44 × 152 ft., and will be erected on First Ave. South near Fifth St. It will contain 33 offices, interior telephone connection, high speed elevators, etc. Cost, $400,000.

KANSAS CITY, MO.—The Y. M. C. A. has awarded contract to J. B. NEEVEL & SON at $131,515 for erection of building, six stories, 96 × 132 ft., brick, stone and steel. Plans have been prepared by Charles A. Smith.

ST. LOUIS, MO.—Plans have been prepared by W. A. Cann, Missouri Trust Bldg., for a 5-story sanitarium and training school for the Masonic Sanitarium & Training School Co., 3503 Franklin Ave. Cost, $150,000.

GILLICK BROS. have contract to erect school building on Morganford Road from plans by William B. Ittner. Structures will be two stories high with basement, 246 × 80 ft., brick, stone, reinforced concrete and terra cotta. Cost, $133,542.

Plans have been prepared by A. B. Groves, Stock Exchange Bldg., for a hospital addition, to cost $800,000.

LITTLE ROCK, ARK.—Plans are being prepared for a 4-story apartment building to be erected on the corner of Fourth and Scott St. by Gen. B. W. Green. Building will cost $100,000.

HOUSTON, TEX.—The contract for the construction of the ten-story steel office building, to occupy the northwest corner of Texas Ave. and Travis St., has been awarded to A. T. LUCAS, of Houston, and the work of construction is to be started within two months.

DENVER, COLO.—A. R. WHITNEY, JR. & CO., 16th and Champa Sts., Denver, have contract to build an office building at 17th and Champa Sts., for the Dome Investment Co.

SEATTLE, WASH.—Plans have been prepared by Graham & Myers, Lowman Bldg., for the Washington hotel to be erected by the Washington Securities Co., Globe Bldg. Cost, $300,000.

TACOMA, WASH.—Reed & Stem, Endicott Bldg., St. Paul, Minn., are preparing sketches for a 3-story pressed brick and cut stone, fireproof, station for the Northern Pacific Ry. Co. to be built here. Cost, $500,000. J. E. Campbell is Superv. Bridges and Bldgs., Tacoma.

PORTLAND, ORE.—Plans have been completed for the Hotel Oregon 9-story annex, by Sutton & Weeks, 2217 Bush St., San Francisco. The new addition will be of steel and brick, and $250,000 will be expended in its erection. It will face the east side of Park St.

SAN FRANCISCO, CAL.—Thomas S. Williams has applied for a permit to erect an 8-story brick store and office building at the corner of Mission and Third Sts., at a cost of $150,000.

F. and B. M. Burbanks have asked for a permit to expend $150,000 on a 7-story brick hotel building at the northwest corner of Post and Stockton Sts.

SAN DIEGO, CAL.—Plans are being completed for a 6-story building to be erected at the corner of Fifth and C Sts. and extending to Sixth St. The structure will have a frontage of 200 ft. on C St. and a frontage of 100 ft. on Fifth and Sixth S's. The building will cost about $300,000. Reinforced concrete or brick will be used. The men furnishing the funds for this new structure are Dr. Fred R. Burnham and George W. Marston, owner of Marston's department store.

SALT LAKE CITY, UTAH.—Samuel Newhouse, Dooly Block, will erect a building for the Commercial Club near Fourth South and Main Sts., which will cost about $700,000. The building will be seven stories high.

WINNIPEG, MAN.—The Manitoba Government has purchased a site at the corner of Charlotte and McDermott Sts., upon which to erect a central exchange for the government telephone system to be erected in Winnipeg. Hon. J. H. Howden, minister of telephones, has announced that bids for construction will be called for at once.

WATER SUPPLY—IRRIGATION.

(denotes that this work is advertised in Engineering News.)*

*WRENTHAM, MASS.—Bids are asked by the Board of Water Commissioners, Edward F. McClennen, Secy., until July 3 for furnishing c.-i. water pipe, gates, hydrants, special castings, steel standpipe and pumping plant. Edmund M. Blake, 8 Beacon St., Boston, Mass., is Engr.

IOWA ISLAND, N. Y.—Bids are asked by the Bureau of Supplies and Accounts, Navy Dept., Washington, D. C., until July 9, for supplying pipe, fittings, etc., at the Naval Magazine, Iowa Island.

NEW YORK, N. Y.—Bids are asked by the Department of Water Supply, Gas and Electricity, John H. O'Brien, Comr., until 2 p. m., July 3, for furnishing, delivering and laying water mains in various streets.

Bids are asked at the same time for furnishing and delivering double-nozzle hydrants; furnishing, delivering and laying force mains and removing existing force mains at the site of the Ridgewood Pumping Station, Boro. of Brooklyn.

ALBANY, N. Y.—Dredging, etc. See under Miscellaneous.

*TITUS HILL (Buffalo post-office), N. Y.—The date has been changed from July 1 to July 8 for receiving bids for constructing 10,000,000-gallon distributing reservoir on the Charles Sickman farm, located one mile east of Titus Hill Station. Bids are asked by the American Pipe Mfg. Co., Fidelity Bldg., Philadelphia, Pa.

*DURHAMVILLE, N. Y.—Designs and plans, accompanied by specifications and proposals, are asked by F. C. Stevens, Supt. Pub. Wks., Albany, until noon, July 18, for constructing arch culvert on aqueduct across Oneida Creek where the creek is crossed by the present Erie Canal. For outline of work, see advertisement.

BUFFALO, N. Y.—The Board of Public Works, Francis G. Ward, Comr., will construct a 500,000-gallon steel water tank with steel frame and brick shell at Kensington and Colfax Aves.

The Board of Public Works has let contract to R. D. WOOD & CO., Camden, N. J., for installing 25,000,000-gallon electric pumps at the water-works pumping station, at $30,400.

TRENTON, N. J.—The Board of Water Commissioners have let contract to WILLIAM R. THROOP, at $12,222, for constructing standpipe 20 ft. in diameter and 80 ft. high, carrying the water level about 20 ft. above present level in the reservoir. The PLATT IRON WKS. CO., of Dayton, Ohio, has secured the contract for installing two pumps, of 1,000,000 gallons capacity per day each, for $12,500. The contract for constructing pump-house has been let to S. W. MATHER & SONS, of Trenton, for $5,386.

WASHINGTON, D. C.—The District Commissioners have awarded to the HERSEY METER CO., East Boston, Mass., and the NEPTUNE METER CO., New York, in equal parts, contract for furnishing 5,000 water meters, at $9 each. They have also awarded to the LYNCHBURG FOUNDRY CO., Lynchburg, Va., contract for furnishing meter box covers at $1.14 each.

WHEELING, W. VA.—The NATIONAL WATER MAIN CLEANING CO. has been awarded contract by the City Water Board for cleaning 7,000 ft. of water mains.

ROCKINGHAM, N. C.—Plans are being prepared by Gilbert C. White, C. E., at Durham, N. C., for constructing waterworks and sewerage systems. Contracts will probably be let in August.

*NEW ORLEANS, LA.—Bids are asked by the Sewerage and Water Board, George G. Earl, Gen. Supt. until 3 p. m., Sept. 4, for hauling and laying approximately 250 miles of 4 to 30-in. c.-i. water pipe, aggregating about 26,000 tons.

TREZEVANT, TENN.—The contract for installing waterworks has been let to J. L. RICHARDS, of this city.

EVART, MICH.—The legislature has authorized the village to issue bonds amounting to $40,000 for constructing waterworks system.

MILAN, MICH.—Plans have been prepared by the Riggs & Sherman Co., 613 Nasby Bldg., Toledo, Ohio, for constructing waterworks system.

SOUTH MILWAUKEE, WIS.—The contract for laying 900 ft. of intake water pipe has been let to M. O. CLUCHEY, of Ludington, Mich., at $3,600.

WEST BRANCH, IOWA.—TURNER & ROWLAND, of Des Moines, Iowa, have secured contract for erecting waterworks plant. Cost, $15,000.

*ST. PAUL, MINN.—Bids are asked by Edward H. Schulz, Capt., U. S. Engrs., until 11 a. m., July 20, for reconstructing Sandy Lake Reservoir dam.

GRAND FORKS, N. DAK.—Bids are asked by the City Council until 4 p. m., July 1, for constructing water main on portion of Cherry St. W. V. O'Connor is City Audr.

PORTLAND, ORE.—The following bids were received June 12 by the Water Board for furnishing 200 fire hydrants, equipped with triple heads: Oregon Foundry, $12,550; R. D. Wood & Co., $9,400; Caldwell Bros. Co., $12,500; Willamette Iron & Steel Wks., $14,400; Hoge & Swift, four bids, $9,130, $8,010; $7,370 and $8,620. Bids were received at the same time for split sleeves and valves from the Water-Works Equipment Co., $6,010, and the A. P. Smith Mfg. Co., $6,324.

TRINIDAD, COLO.—The Hudson Ditch & Reservoir Co. has been incorporated to construct 65,000,000-gallon reservoir in the Apishopa Valley.

SEATTLE, WASH.—GARFIELD & GIFFORD have been awarded contract for laying water main on Ray St., for $16,967.

RATHWELL, MAN.—Bids are asked by W. N. Scarrow, Chn. Water Supply, until July 1, for construction of dam and excavation for water pipe line from point on Sec. 25, Tp. 7, Rge. 9 W., into the village of Rathwell.

VANCOUVER, B. C.—Bids will soon be asked for furnishing water pipe. Estimated cost, $10,000.

BATTLEFORD, SASK.—The MUNICIPAL CONSTRUCTION CO., of Regina, Sask., has secured contract for installing water-works system, at about $50,000.

SIMCOE, ONT.—The contract for constructing water-works system has been let to T. M. CULLON, of Huntsville. Willis Chipman, of Toronto, is Engr.

HAILEY, IDAHO.—Preliminary investigations are being made by H. L. Holister, of the Twin Falls Power Plant, and Dr. Harper, of Chicago, for irrigating all lands between the mountains and Snake River that are not under irrigation. The project is to construct dams at Warm Springs Creek, one at Trail Creek and one at either side of Wood River, at Hailey. The work, including aqueducts, ditches and canals, is estimated to cost, $5,000,000. The promoters are prepared to spend $100,000 in preliminary investigation.

SEWERAGE.

(denotes that this work is advertised in Engineering News.)*

BROOKLINE (Boston post-office), MASS.—Bids are asked by the Selectmen until 4 p. m., July 1, for constructing sewers and surface water drains. The work involves about 5,000 cu. yds. trench excavation in earth, 5,000 cu. yds. trench excavation in rock, laying about 12,000 ft. 8 to 18-in. pipe and about 200 cu. yds. concrete masonry. Alexis H. French is Town Engr.

WEST HARTFORD, CONN.—The Board of Sewer Commissioners have voted to establish a layout for trunk sewer from Fern St. to outlet at Capitol Ave. preliminary to authorizing construction of Park St. sewer system. A. B. Alderson is Engr.

NEW YORK, N. Y.—Bids are asked by George Cromwell, Pres. Boro. of Richmond, until noon, July 9, for constructing temporary sewers.

Bids are asked by John F. Ahearn, Pres. Boro. of Manhattan, until 3 p. m., July 3, for constructing sewers, etc.

The following are the three lowest bidders for constructing sewer in 83d St., from Second Ave. to Narrows Ave., etc., Boro. of Brooklyn, bids received July 19 by Bird S. Coler, Boro. Pres.: Joseph Palinido, $6,206; Donigan & Redmond, $7,545, and O'Grady Bros., $7,866, all of Brooklyn.

DUQUESNE, PA.—The contract for constructing sewers in South Second St., South Duquesne, Whitefield and Viola Aves., has been let to BOWMAN BROS.

DUNMORE (Scranton post-office), PA.—Bids are asked by the Borough Council until 8.30 p. m., June 28, for constructing main and lateral sewers in Section D, Second Sewer District. Leslie S. Marsh is Boro. Secy.

*WASHINGTON, D. C.—Bids are asked by the District Commissioners until noon, July 8, for constructing sewers.

Bids were received as follows June 20 by the District Commissioners for constructing sewers: (1) R. J. Beall Construction Co., Washington; (2) Lyons Bros., Washington; (3) E. G. Gummel, Eckington, D. C.; (4) Jas. A. Coyle, Washington, D. C.:

Valley Falls Branch sewer: ordinary excavation, (1) $1.44; (2) $1.20; (3) $1.10; (4) 80 cts. Sewer brick masonry, (1) $19.50; (2) $18; (3) $22; (4) $20. Rock excavation, (1) $4.50; (2) $4; (3) $4; (4) $3. 18-in. pipe, sewer, (1) $1.35; (2) $1.28; (3) $1.29; (4) $1.20.

Sewer A: Ordinary excavation, (1) $1.10; (2) 98 cts.; (3) 81 cts.; (4) 89 cts. Red brick masonry, (1) $19; (2) $18; (3) $18; (4) $18. 12-in. pipe, (1) $1.05; (2) 87 cts.; (3) 71 cts.; (4) 80 cts.

Sewer B: Ordinary excavation, (a) $1.05; (2) 98 cts.; (3) 90 cts.; (4) $1.50. Red brick masonry, (1) $16; (2) $17; (3) $16; (4) $20. 24-in. pipe, (1) $1.45; (2) $1.19; (3) $1.13; (4) $1.30. 21-in. pipe, (1) $1.30; (2) $1.16; (3) $1; (4) $1.20. 18-in. pipe, (1) $1.15; (2) $1.12; (3) 87 cts.; (4) $1.10.

Sewer C: Ordinary excavation, (1) $1.15; (2) $1.39; (3) 97 cts.; (4) $1.25. Red brick masonry, (1) $16; (2) $18; (3) $17; (4) $18. 18-in. pipe, (1) $1.15; (2) $1.14; (3) 87 cts.; (4) $1.20. 15-in. pipe, (1) $1.10, (2) $1; (3) 77 cts.; (4) $1. 12-in. pipe, (1) 90 cts.; (2) 85 cts.; (3) 67 cts.; (4) 90 cts.

Sewer D: Ordinary excavation, (2) 75 cts.; (3) $1; (4) $1.10. Red brick masonry, (2) $18; (3) $18; (4) $20. 12-in. pipe, (2) 93 cts.; (3) 69 cts.; (4) 90 cts.

Sewer E: Ordinary excavation, (3) $1.15; (4) $1.50. Red brick masonry, (3) $18; (4) $22. 24-in. pipe, (3) $1.12; (4) $1.40. 21-in. pipe, (3) 98 cts.; (4) $1.25. 18-in. pipe, (3) 85 cts.; (4) $1.15. 15-in. pipe, (3) 76 cts.; (4) $1.

WASHINGTON, D. C.—The District Commissioners have awarded contracts as follows for constructing sewers in the District: Tenth St., junction sewer, bids opened June 17, and 17th St., junction sewer, to WARREN F. BRENIZER CO., Second and O Sts., S. E., Washington, at $10,561 and $3,431, respectively. Valley Falls sewer, opened June 20, JAMES A. COYLE, Washington. Sewers A, B, C, opened June 20, to E. G. GUMMEL, Eckington, D. C. Sewer D, opened June 20 to LYONS BROS., Washington.

RICHMOND, VA.—Bids are asked by the Committee on Streets until 4 p. m., June 28, for constructing sewers. W. E. Cutshaw is City Engr.

MACON, GA.—An appropriation of $5,000 has been made for constructing sewer system for the Academy for the Blind.

PENSACOLA, FLA.—Specifications for constructing sewerage system at the Navy Yard, Pensacola, are on file at office of Engineering News, New York. Bids are asked by the Bureau of Yards and Docks, Navy Department, Washington, D. C., until 11 a. m., July 20.

JOHNSON CITY, TENN.—See under Streets and Roads.

WILLOUGHBY, OHIO.—Bids are asked by C. C. Jenkins, Village Clk., until noon, July 22, for constructing sanitary sewer.

CLEVELAND HEIGHTS (Cleveland post-office), OHIO.—Bids are asked by Wm. G. Phare, Village Clk., 204 American Trust Bldg., Cleveland, until noon, July 16, for constructing sewers in Taylor Road. The William H. Evers Engineering Co., 237 The Arcade, Cleveland, are Engrs.

STEUBENVILLE, OHIO.—Bids are asked by the Board of Public Service, T. W. Vance, Clk., until noon, July 15, for constructing 12-in. pipe sewer on Alley "D," south of Washington St.

NAPOLEON, OHIO.—Bids are asked by F. W. Hilgendorff, Village Clk., until noon, July 8, for constructing about 334 ft. 24-in. pipe sewer.

SAGINAW, MICH.—Bids are being received by the Board of Public Works, David C. Bell, Clk., for constructing sewers. The work includes 2,580 ft. 28-in. by 42-in. sewer, 800 ft. 25-in. by 39-in., 1,650 ft. 24-in. by 36-in., 1,390 ft. 20-in. by 30-in., 500 ft. 32-in. by 43-in., and 600 ft. 30-in. by 45-in. egg-shaped masonry sewer. R. W. Roberts is City Engr.

AMBOY, ILL.—J. M. EGAN, JR., of Freeport, Ill., has been awarded contract for constructing sewer system, at $7,022.

OTTAWA, ILL.—We are officially advised that the contract for constructing sewer system was awarded June 18 to GREEN & SONS, 84 La Salle St., Chicago, Ill., for $190,847. Bids were also received from Nash Bros., 84 La Salle St., Chicago, $222,857, and H. D. Hallett, Aurora, Ill., $201,405. Charles F. Wilson is City Engr. Itemized bids are given this week under Contract Prices.

MILWAUKEE, WIS.—Bids are asked by the Board of Public Works, Charles J. Poetsch, Chn., until 10.30 a. m., June 29, for constructing pipe sewers in various streets.

DUBUQUE, IOWA.—Bids are asked by Edmund A. Linehan, City Recorder, until 8.30 p. m., July 1, for constructing about 1,920 lin. ft. 8-in. tile pipe sewers, including seven manholes.

INDEPENDENCE, IOWA.—Bids are asked by the city until 7.30 p. m., July 8, for constructing sanitary sewer.

DES MOINES, IOWA.—The contract for constructing the Ingersoll Ave. sewer has been let to the TURNER CONSTRUCTION CO. Work to be finished Sept. 1. George D. Dobson is City Engr.

Bids are asked by the Board of Public Works until 11 a. m., July 3, for constructing 10-in. vitrified clay pipe sewer on portion of Crocker St., a distance of about 378 lin. ft.

MADISON, S. DAK.—Bids are asked by the Regents of Education, Aberdeen, S. Dak., until 8 a. m., July 8, for constructing sewerage system for the Madison Normal School buildings.

JOPLIN, MO.—Plans and s[pecifications] are being prepared for constr[uction of] storm water system, as w[ell as] sewers, for a portion of the [city]. McDonnell, Kansas City, Mo. [Burns & Engrs.]

ST. LOUIS, MO.—The contra[ct for] tion of the Glaiso Creek [sewer] awarded to the MEYER [CONSTRUCTION] CO., at about $84,000.

BALLINGER, TEX.—Plans [are being pre]pared for constructing sewers [to be installed] by the Odorless Sewerage Co. [about $15,000.] J. R. Potts, Fort Worth, Tex. [Engr.]

POINT RICHMOND, CAL.—[SCHMIDT CONSTRUCTION] CO has been [awarded con]tract for constructing lateral s[ewer for $25,]943.

FREDERICTON, N. B.—J. [MILL, of] Fredericton, has been awarded [contract for] supply of sewer pipes at 9½ [per ft.]

GARBAGE DISPOS[AL].

(denotes that this work is [advertised in] Engineering News.)*

NEWPORT, R. I.—Bids are [asked by the] Bureau of Supplies and Ac[counts, Navy] Dept., Washington, D. C., [until July 9, for] constructing garbage incinerat[or plant at] Naval Training Station, Newpor[t].

ELIZABETH, N. J.—The [City Council] Committee on Health has let co[ntract for re]moving ashes, garbage and offal [for a period] of three years to NICOLA LA [CORTE, 621] Third Ave., Elizabeth, for $34,80[0].

*HARRISBURG, PA.—Bids are [asked by the] Sanitary Committee, Board of [Health, Sey]mour S. Eberts, Chn., until noon [August 5, for] collection and sanitary disposal [of gar]bage and dead animals and removal [of ashes] and miscellaneous refuse, for [period of ten] years, beginning Feb. 1, 1908.

FORT MYER, VA.—Bids are [asked by Capt.] B. B. Hyer, Q. M., until July [17, for con]structing garbage crematory, with [daily ca]pacity of twelve tons.

STREETS AND ROADS.

(denotes that this work is advertised in Engineering News.)*

NASHUA, N. H.—Bids are asked by the State Highway Department until July 5 for constructing two miles of macadam road. A. W. Dean is State Engr.

MILTON, N. H.—Bids are asked by the State Highway Department until July 5 for constructing macadam road. A. W. Dean is State Engr.

FARMINGTON, N. H.—Bids are asked by the State Highway Department until July 5 for constructing macadam road. A. W. Dean is State Engr.

BROOKLINE (Boston post-office), MASS.—Bids are asked by the Selectmen until 4 p. m., July 1, for grading portion of Hammond St. The work involves about 15,000 cu. yds. earth excavation and 8,000 cu. yds. rock excavation. Alexis H. French is Town Engr.

SYRACUSE, N. Y.—Bids are asked by the Board of Contract and Supply until 1.30 p. m., July 1, for constructing stone, cement or asphalt sidewalk. George J. Metz is City Clerk. Henry C. Allen is City Engr.

NEW YORK, N. Y.—Bids are asked by the Bureau of Supplies and Accounts, Navy Dept., Washington, D. C., until July 9, for supplying at the New York Naval Yard 4,000 lbs. Val de Travis asphalt, 5,000 lbs. Trinidad asphalt and 18,000 lbs. paving cement or Trinidad asphalt.

NEW YORK, N. Y.—The Department of Bridges, James W. Stevenson, Comr., has let contract to COOPER & EVANS, 220 Broadway, New York, for widening roadways of the Manhattan approach of the Brooklyn Bridge, at $111,235.

*MORAVIA, N. Y.—Bids are asked by the Village Board, Guy Hilliard, Clk., until noon, July 10, for paving Central St. with vitrified brick on concrete foundation.

ALBANY, N. Y.—Bids are asked by Frederick Skene, State Engr. and Surv., until noon, July 10, for repair of the following roads in Albany County: Sections 1, 2, 3, 4 and 5 of the Delaware Turnpike; Delaware-Slingerland Road, No. 92; North Road, No. 124, and River Road, No. 193.

ALBANY, N. Y.—Bids are asked by the Board of Contract and Supply, Isidore Wachsman, Clk., until 3 p. m., July 1, for improving portions of Morris, Partridge and Judson Sts. The work includes grading, curbing, and paving the carriageways with vitrified paving blocks, repairing and laying sidewalks with flags and vitrified bricks, building receiving basins, and laying vitrified pipe sewers under the sidewalks. Walter Melius is City Engr.

WOODBINE, N. J.—Bids are asked by the Borough Council until noon, July 1, for grading and gravelling various streets. E. J. Asnis is Borough Clk.

PHILLIPSBURG, N. J.—The Board of Freeholders have let contract for constructing macadam road from Phillipsburg to Rocksburg to the MILES-TIGHE CONTRACTING CO. for $43,433. J. B. Salmon submitted a bid of $43,637 and the J. F. Stetzer, Jr., Co., $47,272.

*SALEM, N. J.—Bids are asked by the Road Commissioners of the County Board of Chosen Freeholders, J. F. Ayers, Jr., until 8 p. m., July 8, for grading and placing oyster shell or gravel surface on the Quinton Road, Quinton Township. The work covers a distance of 2.65 miles.

SEWICKLEY, PA.—Bids are asked by Fred T. Martin until 4 p. m., July 2, for paving with vitrified fire brick Centennial Ave., from Nevin Ave. to Grimes St.

BLAIRSVILLE, PA.—Bids are asked by the State Highway Department, Joseph W. Hunter, Comr., until July 2, for constructing 24,547 ft. of road, 16 ft. wide.

PITTSBURG, PA.—The County Commissioners have let contracts for constructing roads as follows: McKees Rocks and Forrest Grove Road, COLLINS, GARDNER & CO., $1,163; McKees Rocks and Steubenville Pike, COLLINS, GARDNER & CO., $51,518; Millvale and Unity Road, W. E. HOWLEY, $17,262, and the Unity and Trestle Road, W. E. HOWLEY, $21,080.

BALLS BLUFF, VA.—Bids are asked by Maj. M. Gray Zalinski, Quartermaster, U. S. A., Washington, D. C., until 11 a. m., July 13, for constructing government roadway at Balls Bluff.

FREDERICKSBURG, VA.—The contract for improving the National Boulevard has been let to JAMES F. BRADLEY CO., of Richmond, Va., for $9,474.

PRATT CITY, ALA.—Bids are asked by the Mayor and City Council until July 3 for constructing cement sidewalks and curbing.

NEW ORLEANS, LA.—Bids are asked by Charles F. Kennedy, City Comptroller, until 1 p. m., July 24, for repair of artificial stone footwalk inside Annunciation Sq. W. J. Hardee is City Engr.

FORT ST. PHILIP, LA.—Bids are asked by Capt. B. F. Clayton, Constructing Q. M., New Orleans, La., until noon, July 1, for constructing roads, walks and drains at Fort St. Philip.

*JOHNSON CITY, TENN.—Bids are asked by E. E. Ellsworth, City Recorder, until noon, July 4, for paving portions of Main, Market, Road, Spring, Tipton and Buffalo Sts. with vitrified brick, bithulithic Hassam or asphalt pavement. Bids also are asked at the same time for all necessary curbing, guttering and sidewalks of concrete and for about 5,800 ft. 8-in. lateral sewers, 5,000 ft. 18 to 24-in. tile or concrete trunk sewers.

HODGENVILLE, KY.—Bids are asked by Claude Hudgins, Clerk B. T. H., until July 1, for constructing 20,000 to 30,000 sq. ft. of concrete sidewalks.

CLEVELAND, OHIO.—Bids are asked by the County Commissioners, Julius C. Dorn, Clk., until 11 a. m., July 13, for grading and draining portion of Taylor Road. A. B. Lea, County Engr.

FINDLAY, OHIO.—Bids are asked by the County Commissioners until noon, July 20, for constructing three miles of stone pike in Orange Township.

CAMBRIDGE, OHIO.—Bids are asked by Sam Huston, State Highway Comr., until July 9, for constructing highway.

ST. CLAIRSVILLE, OHIO.—Bids are asked by Sam Huston, State Highway Comr., until July 10, for constructing two highways.

CHARDON, OHIO.—Bids are asked by Sam Huston, State Highway Comr., until July 16, for constructing highway.

CINCINNATI, OHIO.—Bids are asked by the Board of Public Service, M. J. Keefe, Clk., until noon, July 10, for grading, paving, curbing, etc., portion of Grandin Road. Estimated cost, $21,888.

Bids are asked by the Board of Public Service, M. J. Keefe, Clk., until noon, July 15, for grading, paving, etc., Beechmont Ave. Estimated cost, $99,796. Charles N. Dannenhower is City Engr.

CINCINNATI, OHIO.—The lowest bid received June 21 by the County Commissioners for improving Collerain Pike was submitted by N. Ruebel, 1957 Harrison Ave., Cincinnati, at $45,439.

H. F. Nagel submitted the lowest bid received June 21 by the County Commissioners for improving Richmond Pike, at $41,530.

MARTINSVILLE, IND.—Bids are asked by the County Commissioners until July 2 for construction of four macadamized roads in Adams Township. B. E. Thornburg is County Audr.

NEWPORT, IND.—Bids are asked by the County Commissioners until 10 a. m., July 6, for construction of two gravel roads in Vermillion Township, one 12,210 ft. in length, and the other 10,690 ft. in length. H. T. Payne is County Audr.

SOUTH BEND, IND.—The UNION ASPHALT & CONSTRUCTION CO., of Indianapolis, has secured the contract for paving Jefferson and Main Sts. with asphalt, at about $16,000. Alonzo J. Hammond is City Engr.

PETERSBURG, IND.—Bids are asked by the County Commissioners until 2 p. m., July 2, for construction of rock road in Washington Township, 7,558 ft. in length.

HUNTINGTON, IND.—Bids are asked by the Common Council until 7 p. m., July 2, for grading portion of Polk St. J. B. Vernon is City Engr.

CRAWFORDSVILLE, IND.—Bids are asked by the Board of Commissioners of Montgomery and Putnam Counties until 3 p. m., July 20, for grading, macadamizing, etc., road on county line between Montgomery and Putnam Counties. Benj. F. Carman is Audr. of Montgomery County.

AUBURN, IND.—Bids are asked by E. O. Little, City Clk., until 7 p. m., July 2, for improvement of three streets by paving with street lake asphalt on concrete foundation, with cement curb and gutter. J. F. McDowell is City Engr.

PRINCETON, IND.—Bids are asked by the Common Council until 7 p. m., July 1, for constructing combined curb and gutter of artificial stone or concrete masonry on portion of Clark St. Charles W. Benton is City Clk.

*AURORA, ILL.—Bids are asked until 2 p. m., July 2, for constructing brick pavement and combined curb and gutter on portions of Jackson and Clark Sts. Estimated quantities are 18,000 sq. yds. pavement and 11,700 lin. ft. combined curb and gutter. Myron J. Tarble is City Engr.

APPLETON, WIS.—Bids are asked by the Board of Public Works, until 5 p. m., July 3, for improvement of portions of Oneida, Appleton and Washington Sts. E. Williams is City Clk.

MILWAUKEE, WIS.—Bids are asked by the Board of Public Works, Charles J. Poetsch, Chn., until 10.30 a. m., June 29, for constructing brick pavement on portion of Kinnickinnic Ave.

GREEN BAY, WIS.—Bids are asked by the Committee on Streets and Bridges until 10 a. m., July 15, for grading, paving, etc., various streets.

CEDAR FALLS, IOWA.—W. A. BRYANT & SONS CO., of this city, have secured the contract for street paving during the present season for $26,759.

CANTON, S. DAK.—Bids are asked by the City Council until 8 p. m., July 1, for constructing concrete sidewalks. G. C. Glendinning is City Audr.

ENTERPRISE, ORE.—The contract for constructing water grade road has been let to JONAS TRUMP, of Promise, Ore., for $3,450.

OGDEN, UTAH.—Bids are asked by the City Recorder until 8 p. m., June 30, for building curbs and gutter in Orchard Ave. In addition to the above the following work has been ordered and bids will be asked on each job separately and at different times: Washington Ave. sidewalks, over 24 blocks; Orchard Ave. sidewalks, one block; 27th St. curb and gutter, seven blocks; Wall Ave. curb and gutter, two blocks; Wall Ave. asphaltum pavement, one block; Monroe Ave. sewer, one block. Each block is 660 ft. long. A. F. Parker is City Engr.

PROVO, UTAH.—The City Council has let contract to S. H. BELMONT, of this city, for laying 373,250 sq. ft. of sidewalks, at $48,622.

BRAMPTON, ONT.—The ROYAL ARTIFICIAL STONE PAVING CO. has been awarded contract for constructing sidewalks.

MANUFACTURING PLANTS.

HARTFORD, CONN.—The Royal Typewriter Co., 46th St., Brooklyn, N. Y., will construct plant to cost $500,000. It will cover 250,000 sq. ft. of floor space, and be capable of turning out 25,000 machines annually. Allan A. Ryan is Pres. and Treas.

JERSEY CITY, N. J.—The Alex Hamill Iron Works, of Jersey City, will build a bridge and structural shop upon their Mercer St. property from designs and details of Nathaniel Roberts, Consult. Engr. Building will be of steel frame, covered with galvanized corrugated steel, 75 ft. wide, by 200 ft. long, central portion 43 ft. wide, by 200 ft. lower chords, equipped with 6-ton travelling power crane, two side spans 16 ft. each; building lighted by swinging sashes 6 ft. high, both sides and ends. The 100-ft. at Mercer St. end will be built at once, and the additional 100 ft. to Montgomery St., next season.

CHARLOTTE, N. C.—The American Machine & Mfg. Co. will shortly commence erection of building for manufacture of soil pipe and fittings at Charlotte. The company recently bought the contracting and machinery business of the D. A. Tompkins Co.

WEST POINT, GA.—The West Point Manufacturing Co., L. Lanier, Pres., will build an additional mill, to be equipped with 34,000 spindles and 1,020 looms, for manufacturing cotton duck. Company has purchased 300 acres of land as site and is now having the property platted for erection of three-story building 800 ft. long, 200 operatives' cottages and other structures. B. H. HARDAWAY, of Columbus, Ga., has contract to build the power-house. LOCKWOOD, GREENE & CO., of Boston, Mass., are the architects for the new mill. Electricity is to be the motive power of the plant.

NASHVILLE, TENN.—The Allen Mfg. Co., Nashville, manufacturers of steel ranges, has let contract for two-story brick addition to its plant, 60 × 80 ft., which will increase its output to 50 steel ranges per day. The lower floor will be used for manufacturing and the upper floor for storage. All contracts for machinery and tools have been placed.

The Bell-Walling Watchcase Manufacturing Co., capitalized at $150,000, will establish factory for manufacture of watchcases. Building has been purchased, in which modern machinery will be installed. O. E. Bell and Mr. Walling, recently of McMinnville, compose the company.

NEW SOUTH MEMPHIS (Memphis postoffice), TENN.—The Conley Frog & Switch Co., incorporated with a capital stock of $200,000, is erecting factory on three acres of ground at Station G, New South Memphis. It is expected that the plant will be in operation by August 1, manufacturing crosses, switches, switch stands, rail braces, &c. J. E. Conley, of Arcola, Ill., is Pres. F. J. Callahan, of the Geo. C. Callahan Construction Co., Chicago, is Secy. and Treas.

KNOXVILLE, TENN.—The Southern Pipe & Foundry Co., Knoxville, has been incorporated with capital stock of $50,000, by F. S. Mead, J. G. Simpson, John C. Houk, H. M. Houk and others. A plant will be erected for the manufacture of sewer pipe of various sizes.

IRONTON, OHIO.—The Ironton Malleable Iron Co. recently organized, is building a plant, the main building of which will be 120 × 360 ft., equipped with electric traveling crane, and an L to be 95 × 125 ft. A site has been secured and ground has been broken for the buildings, which will be of steel, and contract for which will soon be placed. F. C. Tomlinson is Pres.; H. H. Mittendorf is Secy. and Treas.; J. M. Barringer, formerly with the Zanesville Malleable Co., Zanesville, Ohio, is Vice-Pres. and Gen. Mgr., and Robert R. Barrington is Supt. The company will be in the market for considerable equipment for its new plant.

CINCINNATI, OHIO.—The Elmwood Castings Co., Station P, Cincinnati, will erect foundry building of brick and steel construction 125 × 300 ft., to manufacture general line of gray iron castings. James E. Stacey of Stacey Manufacturing Co. is Pres.; A. L. Pope, Cashier of First National Bank of Elmwood Place, is Treas.

CLEVELAND, OHIO.—The Buckeye Mfg. Co. will erect factory at the corner of West Broad and Center Sts., to manufacture the "Buckeye" water lift. D. H. Forbes is Secy.

ANDERSON, IND. — The Bassler Manufacturing Co. will establish and equip leather manufacturing plant.

CHICAGO, ILL.—Jenney, Mundie & Jensen, Archts., 1401 New York Life Bldg., 169 La Salle St., have prepared plans and will let contracts shortly for store and loft building to be built at the northeast corner of Franklin and Van Buren Sts., for Hirsch, Wickwire & Co., manufacturers of clothing, 341 South Franklin St. It will be 10-story, 100 × 153 ft., of fireproof construction, have fronts of glazed brick for the lower two stories, pressed brick above, composition roof, steam heat, electric light, automatic sprinkler system, the latest improvements and cost $300,000.

RACINE, WIS.—The F. W. Graham Manufacturing Co., of this city, will erect factory. Cost, $50,000.

CLARINDA, IOWA.—The Lisle Manufacturing Co. will construct a foundry, 70 × 175 ft.

BRAINERD, MINN.—W. L. Darling, Ch. Engr., Northern Pacific Ry., St. Paul, Minn., has awarded general contract for constructing railroad shops, consisting of eight buildings, to LIBBY & NELSON, Minneapolis, Minn. Cost, complete, $110,000.

ARMOURDALE, KAN.—The GEORGE B. SWIFT CO., 903 Security Bldg., 188 Madison St., has the general contract for several structures to be built in connection with the shops of the Chicago, Rock Island & Pacific Ry. Co., at Armourdale. They comprise a 1-story machine shop, 65 × 165 ft. of ordinary construction, with brick exterior and composition roof, carried on steel trusses; 27-stall roundhouse, of brick, with gravel roof, 1-story frame storehouse, 30 × 60 ft; two table and cinder pits, a 320-ton conveyor, type coaling station of wood. Estimated cost, $125,000.

KANSAS CITY, MO.—LONSDALE BROTHERS, Bryant Bldg., Kansas City, have contract for 1-story brick and stone factory building, 140 × 145 ft. for the Witte Iron Works. Sheppard & Farrar, Long Bldg., are Archts. Cost, $25,000.

ST. LOUIS, MO.—The St. Louis Lightning Rod Co., of this city, has secured an entire city block fronting 313 ft. on Trudeau St., where it purposes to build plant, plans for which are now being prepared. The plant will have capacity about four times as great as that of the present factory at 1901-1905 South Third St.

DE SOTO, MO.—Plans have been prepared by J. H. G. Clymer, Chestnut and Seventh St., for factory for the Peters Shoe Co. The main building will be 300 × 50 ft., three stories high. Cost, $80,000.

GRAND JUNCTION, COLO.—The Colorado Preserving Co. of which E. J. Mathews is one of the incorporators, will erect canning factory. Cost, $50,000.

ANACORTES, WASH.—A 3-story glue and cement plant to be 48 × 140 ft. will be constructed by the Russia Cement Co., of Gloucester, Mass. Cost, $100,000.

MONTESANO, WASH.—The Gregnon Shingle Co. has decided to locate on Chehalis River front at this place and will build an up-to-date combination shingle and sawmill with capacity of 200,000 shingles and 50,000 ft. of lumber per day. Construction will begin on the plant within a couple of weeks and will be equipped with the most modern machinery.

HOQUIAM, WASH.—National Lumber & Box Co. will spend $500,000 on new machinery and improvements.

TACOMA, WASH.—The McConnell Engineering & Machinery Co. has been incorporated to operate foundry and machine shop business and will take over plant of the Puget Sound Drydock & Machine Co. on Dock St. The plant will be enlarged and improved.

BELLINGHAM, WASH.—Funnell Bros. and True Uncaphor are preparing to build sawmill with daily capacity of 25,000 to 40,000 ft. on Anderson Creek about seven miles from Bellingham.

WASHOUGAL, WASH.—McFarland Bros., of Portland, have bought Hutchinson Bros.' mill, near Skye. The new owners have large bodies of timber in this section. It is reported that they will build mill near site of the one they have just bought, and will move the small one to Washougal, where all of the planing and finishing is to be done. It is said the scheme contemplates a flume from the new mill to Washougal to carry the lumber to this place for shipment.

TACOMA, WASH.—Thirty acres of tidelands in section 22, fronting on deep water, have been purchased by A. G. and Charles Hanson, of the White River Lumber Co., of Enumclaw, as the site for sawmill to be erected by them and to have a capacity of 250,000 ft. of lumber per day.

MULDOON, IDAHO.—Asa Womack will erect mill with capacity of 3,000 ft. per day on north side of Little Cooper Creek west of this place.

LONDON, ONT.—The Grand Trunk Ry. has prepared plans for extension of the company's shops in the east end of this city. Estimated cost, $50,000. Jos. Hobson, Montreal, Que. is Ch. Engr.

MISCELLANEOUS CONTRACTS.

(denotes that this work is advertised in Engineering News.)*

U. S. RECLAMATION SERVICE.—All news relative to canal projects, etc., will be found under Water Supply—Irrigation.

*DREDGING.—Charleston, S. C.—Bids are asked until noon July 20, by Capt. G. P. Howell, Corps Engrs., U. S. A., for dredging in Winyah Bay, S. C.

DREDGING. — Beverly, Mass. — Contract for dredging Beverly Harbor has been let to the BAY STATE DREDGING CO., 19 High St., Boston, at 38½ cts. a cu. yd.

*DREDGING.—New Jersey.—Bids are asked by Col. D. W. Lockwood, Corps Engrs., U. S. A., Army Bldg., until noon, July 27, for dredging in Woodbridge Creek, N. J.

*DREDGING.—New York, N. Y.—Bids are asked by Lieut. Col. W. L. Marshall, Corps Engrs, U. S. A., until noon, July 24, for dredging in Bay Ridge and Red Hook Channels, New York Harbor.

*CREOSOTED LUMBER AND RUBBLE STONE.—Charleston, S. C.—Bids are asked by Capt. G. P. Howells, Corps Engrs., U. S. A., until noon, July 11, for furnishing creosoted lumber and rubble stone.

WHARF.—Dalhousie, N. B.—Bids are asked by D. Pottinger, Gen. Mgr. Intercolonial Ry., Moncton, N. B., until July 2, for the erection and completion of an extension of the present railway wharf at Dalhousie.

*DREDGING.—New York, N. Y.—Bids are asked by Col. John G. D. Knight, Corps Engrs., U. S. A., Army Bldg., New York, until noon, July 24, for dredging in mouth of Schodack Creek, Hudson River, N. Y.

PIERHEAD.—Hamilton, Ont. — Contract for constructing a pierhead in the channel at Hamilton, Ont., has been awarded to JOSEPH BATTLE, of Thorold, Ont. Fred Gelinas, Ottawa, Ont., is Secy. Dept. Pub. Wks.

DREDGING.—Toronto, Ont.—The WINDSOR DREDGING CO. has been awarded the contract of dredging Toronto harbor, for which purpose the Dominion Government has appropriated $50,000 to be expended this year on the work.

REMOVABLE DAM.—Cobleskill, N. Y.—FRED BUCK, of Afton, N. Y., has contract for rebuilding concrete foundation for a removable dam at Cobleskill, N. Y. Plans were prepared and the work is in charge of E. F. Musson, of Norwich, N. Y.

DREDGING.—Buffalo, N. Y.—The bids received June 20, by Francis G. Ward, Comr. Dept. Public Works, for dredging Buffalo Inner Harbor, about 140,000 cu. yds., were: Lake Erie Dredging Co., 30 cts. a cu. yd., Buffalo Dredging Co., 32 cts. a cu. yd.

DREDGING.—Victoria Harbor, Ont.—The contract for dredging at Victoria Harbor, Ont., has been awarded to the OWEN SOUND DREDGE & CONSTRUCTION CO., Ltd., of Owen Sound, Ont. Fred Gelinas is Secy. Dept. Pub. Works, Ottawa, Ont.

COAL HOISTING TOWER.—California City Point, Cal.—The Bureau of Equipment, Navy Dept., Washington, has awarded to the SAN FRANCISCO BRIDGE CO., San Francisco, contract for constructing a coal hoisting tower at California City Point, Cal., at $36,900.

TUNNEL.—Chattanooga, Tenn. — Contract for constructing Mission Ridge highway tunnel near Chattanooga, Tenn., was let on June 15 to T. J. SHEA, 1123 Peters Ave., New Orleans, La. Contract price for work complete was $122,424. Work is to be completed in 18 months.

RIPRAP.—Washington, D. C.—The Office of the Engineers, U. S. A., Washington, D. C., has awarded to CHARLES G. SMITH & SONS, 3218 K St., N. W., Washington, contract for furnishing and placing 5,000 cu. yds. of riprap stone in Anacostia River at $1.47½ per cu. yd.

DREDGING.—Moline, Ill.—We are officially advised that T. B. Davis submitted the only bid received June 19 by Maj. C. S. Riche, Corps of Engrs., for hire and operation of dredging plant, to consist of dipper dredge, tender and dump-scows, for use at Moline, which will probably be accepted.

DREDGING.—Charleston, S. C.—Bids are asked until 11 a. m., July 20, at the Bureau of Yards and Docks, Navy Dept., Washington, D. C., for dredging 545,000 cu. yds. of material at the Navy Yard, Charleston. Specifications are on file at office of Engineering News, New York. R. C. Hollyday is Ch. of Bureau.

BLASTING.—Portsmouth, N. H.—Bids are asked until 11 a. m., July 20, at the Bureau of Yards and Docks, Navy Dept., Washington, D. C., for removing a ledge in front of quay wall at the Navy Yard, Portsmouth. Specifications are on file at the office of Engineering News, New York. R. C. Hollyday is Ch. of Bureau.

BREAKWATER.—Petit Rocher, N. B.—Bids are asked until July 15 by Fred Gelinas, Secy. Dept. Public Works, Ottawa, Ont., for the construction of an extension from the Breakwater to the shore at Petit Rocher, Gloucester County. E. T. P. Shewen is Res. Engr., St. John, N. B. Geoffrey Stead is Res. Engr., Chatham, N. B.

TRAVELING CRANES.—Bremerton, Wash.—Bids are asked until 11 a. m., July 20, at the Bureau of Yards and Docks, Washington, D. C., for furnishing two 20-ton, 4-motor electric traveling cranes at the Navy Yard, Puget Sound. Specifications are on file at the office of Engineering News, New York. R. C. Hollyday is Ch. of Bureau.

COAL POCKET.—Charlestown, Mass.—The Lehigh & Wilkesbarre Coal Co., 141 Milk St., Boston, has let contract for constructing foundation of coal pocket at Charlestown to the BRYAN CONSTRUCTION CO., 53 State St., Boston, at $27,000. Concrete piling will be used. Contract for constructing superstructure will be let about July 15.

SEAWALL.—San Francisco, Cal.—The Seawall Commission, consisting of Gov. Jas. N. Gillett, and Harbor Commissioners W. V. Stafford, H. J. Crocker and W. E. Dennison, has awarded contract to the HEALY-TIBBITS CONSTRUCTION CO., Mission St. Dock, for the construction of Section 12 of the seawall. The new seawall will start at Pier 42 and cut through the old Mail dock and the little Mail dock as far as Fremont St. It is estimated that 150,000 tons of stone, of 2,240 lbs. to the ton, will be used in its construction. Lott D. Norton, Ch. Engr., Bd. State Harbor Comrs.

***CONCRETE WALLS AND EXCAVATION.**—Grand Rapids, Mich.—Bids are asked by the Board of Public Works until 8 p. m., July 18, for constructing 4,000 cu. yds. concrete walls, excavating 18,000 cu. yds. rock and 8,000 cu. yds. earth in connection with flood protection work at Grand Rapids. Charles M. Wilson is Pres.; L. W. Anderson is City Engr.

TRANSPORTING COAL.—Washington, D. C.—The Bureau of Equipment, Navy Dept., Washington, has awarded to McCALL, DINNING CO., Baltimore, Md., contract for transporting 50,000 tons of coal from Newport News, Va., to Sangley Point, Manila, P. I., at $4.00 per ton; and to LIND & CO., New York, for transporting 10,000 tons in Aug. at $4.45, and 10,000 in Sept., for $4.50.

DREDGING.—Logansport, Ind. — We are officially advised that bids were received June 11 from (A), J. A. Fluck, (B), Wm. Gundrum, Royal Center, Ind., (C), J. A. McAndrews, Kankakee, Ill., (D), Farmer & Yernan, (E), M. B. SPENCER, Monticello, Ind. (awarded contract), (F), C. H. Shernberg & Sons, as follows, the work involving 300,000 cu. yds. dredging: (A), 22¼ cts. per cu. yd., (B), 11½ cts., (C), 11 cts., (D) 10½ cts., (E), 10¼ cts., (F), 14 1-5 cts. A. C. Davisson is Construction Comr.

TARGET SHELL.—Washington, D. C.—The Bureau of Ordnance, Navy Dept., Washington, has awarded contracts as follows for steel shell opened May 22: 3,000 5-in. 60-lb. forged steel shell, BETHLEHEM STEEL CO., South Bethlehem, Pa., $9.80 each. 5,000 3-in. 50 caliber target shell, U. S. RAPID FIRE GUN & POWER CO., Bridgeport, Conn., $1.745 each. 2,000 5-in. 50-lb. shell, E. W. BLISS CO., Brooklyn, N. Y., $8.75. 8,000 6-in., 5,000 8-in. and 5,000 13-in. target shell, to FIRTH-STERLING STEEL CO., Washington, D. C., at $11.75, $29; and $97.50.

ARMOR PLATE.—Washington, D. C.—Bids were received June 20 by the Secretary of the Navy, Washington, for steel armor plate for battleships 28 and 29. Class A is not to exceed 7,956 tons; Class B, 952 tons; Class C, 392 tons; Class D, 76 tons. Carnegie Steel Co., Pittsburg, and Bethlehem Steel Co., South Bethlehem, Pa., quoted the same prices and delivery, except that the former did not bid on Class D, as follows: Class A, $420 per ton; Class B, $400; Class C, $400; Class D, $400; time, commence Dec. 20, 1907; deliver 600 tons per month thereafter. Midvale Steel Co., Philadelphia, Pa., Class A, $410, $428, $550; Class B, $410, $428, $550; Class C, $410; Class D, $410; same time of delivery.

DREDGING, Huntington, N. Y.—The following bids were received for dredging in Huntington and Peekskill Harbors, and East Chester Creek, N. Y., June 19, at New York, by Col. John G. D. Knight, Corps of Engrs.; (a) price per cu. yd., scow measure, Huntington Harbor, (b) Peekskill Harbor, (c) East Chester Creek: John P. Randerson, Albany, N. Y., (a) 26 cts., (b) 20 cts.; Du Bois Bros. Dredging Co., 17 Whitehall St., New York, (a) 35 cts., (b) 24½ cts.; F. R. Long Co., Hackensack, N. J., (c) 52 cts.; John and Joseph McSpirit, Jersey City, N. J., (a) 30 cts.; (c) 47 cts.; Newburgh Dredging Co., Newburgh, N. Y., (b) 12 cts.; J. M. Briggs, 154 Nassau St., New York City, 37.8 cts.; Maritime Dredging Co., 78 Broad St., New York City, (a) 28¼ cts., (b) 14⅞ cts., (c) 33 1-3 cts.

LOCK AND DAM.—Irvine, Ky.—Following is a list of the bids received on June 4, by Maj. J. G. Warren, Corps Engrs., U. S. A., for constructing Lock and Dam No. 12, Kentucky River, near Irvine, Ky.; (a) Plan No. 1, (b) Plan No. 2: Sheridan-Kirk Contract Co., Cincinnati, Ohio, (a) $406,393, (b) $447,429; the Hollerbach & May Contract Co., Evansville, Ind., (a) $412,352, (b) $451,112; Mason, Hanger & Coleman Co., Richmond, Ky., (a) $496,780, (b) $545,875; H. E. Talbott & Co., Dayton, Ohio, (a) $395,669, (b) $434,329; Bates & Rogers Construction Co., 335 Dearborn St., Chicago, Ill., (a) $514,222, (b) $563,347; OHIO RIVER CONTRACT CO., (awarded contract), Glen Osborne, Pa., (a) $381,309, (b) $417,469. Itemized prices for this work may be found under Contract Prices this week.

*RIVER IMPROVEMENT.—Albany, N. Y.—Bids are asked until noon, July 12, by the State Water Supply Commission, DeGraaf Bldg., Albany, for the work of straightening, deepening and improving Canaseraga Creek, Kiskaqua Creek and other ditches in Livingston County, N. Y. The work includes about 677,100 cu. yds. of earth excavation; 10,200 cu. yds. of earth filling and embankment; clearing and grubbing; 15,000 lin. ft. of round timber; 89,300 ft. of sawed timber; 400 piles; 1,690 cu. yds. of concrete; 358,000 lbs. structural steel for bridges and 3,800 lin. ft. of pipe railing. Bids will be received for the whole work, or for any one of the nine sections into which the work has been divided. Henry H. Persons, DeGraaf Bldg., Albany, is Pres. of the Commission, and John C. Granes is Secy.; Myron S. Falk, 60 Wall St., New York, is Consult. Engr. Walter McCulloch, Dansville, N. Y., is Res. Engr. The following bids were received on June 21 for the above work, but were declared informal and were rejected: Graves & Stephens, Columbus, Ohio, $135,933; Gilmour, Horton, Allen Co., Sandy Hill, N. Y., $199,343, and Pennell & O'Hearn, Yonkers, N. Y., $215,549.

CEMENT.—Los Angeles, Cal.—The following are the bids (per barrel) opened June 14, by the Board of Public Works of the City of Los Angeles, Cal., for furnishing Portland cement for the Los Angeles Aqueduct, a conduit 225 miles long to be built by the municipality from Owens Valley to Los Angeles for the purpose of furnishing the city an adequate water supply; Item 1 called for bids on 30,000 bbls. Portland cement, delivery to commence 60 days after execution of contract, to continue in such quantities and at such times as may be required, but not more than 5,000 bbls. in any one calendar month. Item 2 called for bids on 1,250,000 bbls. Portland cement exclusive of aforesaid 30,000 bbls., delivery to commence twelve months after execution of contract and to continue in such quantities and at such times as may be required, but not more than 80,000 bbls. in any one calendar month. Item 3 includes all Portland cement mentioned in Items 1 and 2: (a) South California Cement Co., Riverside, Cal., (b) Iola Portland Cement Co., Iola, Kan., (c) Pacific Portland Cement Co., Cement, Cal., (d) West Building Material Co., Napa, Cal., (e) California Portland Cement Co., Colton, Cal., (f) Carl Leonardt, Cement, Cal.: Item 1, 30,000 bbls. (a) $1.27½, (d) $1.20, (e) $1.75; (f) $1.70; Item 2, 1,250,000 bbls. (b) $1.60, (c) $1.40, (d) $1.05, (e) $1.32½, (f) $1.40; Item 3, 1,280,000 bbls. (d) $1.05.

The award of contract for Item 1 was made June 18 to the CALIFORNIA PORTLAND CEMENT CO., of Colton, Cal. The freight from the factory to Mojave, the point of delivery, is 38 cts. per bbl. Items 2 and 3 have not been acted upon. For furnishing the large amount named in these items the city is considering the advisability of building and operating its own cement plant.

CONTRACT PRICES.

[Where (*) precedes items under Contract Prices the work was advertised in Engineering News.]

*LOCK AND DAM.—Irvine, Ky.—The following bids were submitted on June 4 to Major J. G. Warren, Corps Engrs., U. S. A., for constructing Lock and Dam No. 12, Kentucky River, near Irvine; (A) Sheridan-Kirk Contract Co., Cincinnati, Ohio; (B) The Hollerbach & May Contract Co., Evansville, Ind.; (C) Mason, Hanger & Coleman Co., Richmond, Ky.; (D) H. E. Talbott & Co., Dayton, Ohio; (E) Bates & Rogers Construction Co., 355 Dearborn St., Chicago, Ill.; (F) OHIO RIVER CONTRACT CO., Glen Osborne, Pa. (awarded contract):

Plan 1:	(A)	(B)	(C)	(D)	(E)	(F)
38,000 cu. yds. earth excavation	$0.58	$0.30	$0.70	$0.45	$0.55	$0.35
200 cu. yds. rock excavation	2.00	3.00	4.00	2.50	4.00	2.00
62,000 cu. yds. embankment	.40	.30	.55	.45	.50	.47
1,800 cu. yds. ballast	2.24	2.50	2.50	1.70	2.60	1.35
35,450 cu. yds. concrete	5.30	6.40	7.15	5.50	8.15	5.00
2,300 cu. yds. paving	9.75	6.00	6.00	7.50	7.00	6.50
1,000 tons derrick stone	1.70	3.00	3.00	3.00	2.50	2.50
1,200 sq. yds. riprap	2.75	3.00	2.00	2.50	2.00	2.50
37,800 bbls. cement	2.14	2.50	2.30	2.10	2.35	2.40
12,000 M. ft. B. M. timber	80.00	125.00	100.00	100.00	65.00	100.00
50,000 M. ft. B. M. shoring	60.00	50.00	60.00	40.00	55.00	100.00
310,000 lbs. iron and steel	.08	.05	.10	.075	.08	.075
45 lin. ft. gages	2.00	3.00	1.00	3.00	2.00	2.00
175 lin. ft. drains	.75	.50	.30	.25	1.00	.45
2,500 lin. ft. fencing	.375	.30	.35	.15	.80	.20
Totals	$406,393	$412,552	$496,780	$395,669	$514,222	$386,389

Plan 2:	(A)	(B)	(C)	(D)	(E)	(F)
107,000 cu. yds. earth excavation	$0.58	$0.30	$0.70	$0.45	$0.55	$0.35
200 cu. yds. rock excavation	2.00	3.00	4.00	2.50	4.00	2.00
70,000 cu. yds. embankment	.40	.30	.55	.45	.50	.47
2,000 cu. yds. ballast	2.24	2.50	2.50	1.70	2.60	1.35
38,350 cu. yds. concrete	5.30	6.40	7.15	5.50	8.15	5.00
2,500 cu. yds. paving	9.75	6.00	6.00	7.50	7.00	6.50
1,000 tons derrick stone	1.70	3.00	3.00	3.00	2.50	2.50
2,000 sq. yds. riprap	2.75	3.00	2.00	2.50	2.00	2.50
41,000 bbls. cement	2.14	2.50	2.30	2.10	2.35	2.40
12,000 M. ft. B. M. timber	80.00	125.00	100.00	100.00	65.00	100.00
50,000 M. ft. B. M. shoring	60.00	50.00	60.00	40.00	55.00	100.00
310,000 lbs. iron and steel	.08	.05	.10	.075	.08	.075
45 lin. ft. gages	2.00	3.00	1.00	3.00	2.00	2.00
175 lin. ft. drains	.75	.50	.30	.25	1.00	.45
2,500 lin. ft. fencing	.375	.30	.35	.15	.80	.20
Totals	$447,429	$451,112	$545,875	$434,329	$563,347	$417,469

*FILTERS.—West Point, N. Y.—The following bids were received June 10 by the Quartermaster, U. S. Military Academy, for constructing two covered slow sand filters, each about one-eighth acre in extent; bids were submitted by (A) Boston & New York Contracting Co., 220 Devonshire St., Boston, Mass.; (B) E. A. Matthews, 13 Park Row, New York; (C) Russell Contracting Co., 156 Fifth Ave., New York; (D) Ley Construction Co., Springfield, Mass.; (E) McHarg-Bartan Co., 299 Broadway, New York:

	(A)	(B)	(C)	(D)	(E)
4,545 cu. yds. rock excavation	$2.70	$2.50	$3.00	$2.50	$2.50
1,948 cu. yds. earth excavation	2.70	1.00	1.12	1.00	1.00
1,672 cu. yds. concrete in place	8.25	12.00	14.00	14.50	11.50
478.2 cu. yds. gravel in place	2.00	3.00	3.00	2.40	2.50
2,317 cu. yds. filter sand in place	2.20	3.25	3.50	5.50	3.00
Pipes and drains in place	3,200.00	3,167.00	3,800.00	2,000.00	4,000.00
Fixtures in place	3,700.00	2,672.00	4,200.00	4,000.00	3,000.00
3,800 cu. yds. puddle, fill and earthwork in place	.75	1.25	2.45	1.30	1.00
Totals	$47,129	$50,981	$66,079	$62,386	$51,485

U. S. POSSESSIONS AND CUBA.

(denotes that this work is advertised in Engineering News.)*

*DREDGING.—Porto Rico.—Bids are asked until 11 a. m., Aug. 7, by Maj. Charles L. Potter, Corps Engrs., U. S. A., Tompkinsville, N. Y., for dredging in San Juan Harbor, Porto Rico.

LOCOMOTIVE CRANES.—Panama.—David W. Ross, Gen. Purchasing Officer, Isthmian Canal Comn., Washington, D. C., has awarded to the INDUSTRIAL WORKS, Bay City, Mich., contract for furnishing four locomotive cranes, at $39,820.

FOREIGN CONTRACTS.

(To insure prompt attention, letters upon consular business should be addressed to the American Consul at ———, ——— Such letters are opened and attended to by the person that may be in charge of the office. If addressed to the consul, personally, letters are forwarded to him, unopened, should he be absent, and a delay thus intervenes. If, in the meantime, he should have gone out of office the matter may wholly escape attention.)

QUAY.—France.—A "vertical" quay is to be constructed at the port of Mortagne sur-Gironde (Charente Inferieure), France.

RAILWAYS.—Sweden. — The government contemplates extending railway from Marjarv to Laptrask, at a cost of about $323,000.

RECLAMATION. — Russia.—Various works will be undertaken by the Executive Committee for reclaiming part of Bay of Bibi-Eibat for the purpose of petroleum production, Baku, Russia. Estimated cost, $3,335,000.

ELECTRIC EQUIPMENT. — Australia. — Bids are asked at the office of the Postmaster General, Sydney, N. S. W., until Aug. 14, for the supply and delivery at the Departmental Stores, Sydney, of telegraph, telephone, and electric light material.

WHARF.—Egypt.—Bids are asked until noon, July 30, by the Administration of Ports and Lighthouses, Alexandria, for the construction of a wharf, 140 meters long, at Port Ibraham (Suez). Only contractors who have previously executed work of this nature will be permitted to tender.

ELECTRIC RAILWAY.—Switzerland. — A concession has been granted to Fridolin Simon, of Ragaz, and H. de Gugelberg, Engr., of Zurich, for the construction and working of an electric railway, narrow gage, from Landquart via Ragaz to the frontier of the principality of Liechtenstein.

CIVIL SERVICE EXAMINATIONS.

ELECTRICIAN.—Albany, N. Y.—The State Civil Service Commission will hold an examination on July 13 for the position of Electrician, Education Dept., at $720 a year. The last day for filing applications for these positions is July 6. Full information and application forms may be obtained by addressing Charles S. Fowler, Ch. Examiner of the Commission, Albany.

CHEMIST AID.—Washington, D. C.—The United States Civil Service Commission announces an examination for the position of Chemist Aid in the Bureau of Chemistry, Department of Agriculture, at a salary of $1,000 a year. Age limit 20 to 30 years. Application Form 304. Applicants may file their applications for this position any time. These applications and the material submitted with them will, however, be considered and rated at specific intervals to be determined by the Commission.

INSPECTOR OF REGULATING, GRADING AND PAVING—There were 143 eligibles who passed the examination held by the Municipal Civil Service Commission on June 19. The 25 standing first were:

Gassaway, Henry N. (veteran) 26 Court St., Brooklyn.. ....78.50
Birmingham, Richard H. (veteran), 56 West 93d St.. ....77.10
Casey, Patrick F., 432 West 42d St...89.30
Kelly, Charles F., 110 East 96th St..89.30
Byrne, John J., 229 East 18th St.....88.60
Corrigan, Robert, 1056 Lexington Ave..87.70
Quirk, Thomas, 1041 Hall Pl., The Bronx.. ....86.30
Maloy, John L., 503 West 148th St....85.60
Cocroft, John B., 2194 Seventh Ave. ..85.40
Foley, Joseph P., 348 East 77th St....84.70
Lennon, Dennis, 628 East Twelfth St..83.40
Nickening, Otto E., 462 Eleventh St., Brooklyn.. ....83.10
Wall, John F., 1825 Amsterdam Ave....83.00
McNeius, John, 362 Seventh St., Brooklyn.. ....83.00
Devlin, James J., 1295 Third Ave.... ..83.00
Corbin, John J., 333 East 23d St. 82.50
Mahon, John J., 1508 Second Ave.... ..82.50
Jones, James J., 12 Lincoln St., Westchester 82.10
Jennings, John R., 315 East 77th St..81.90
Reisner, Julius, 423 East 78th St....81.60
McDonald, Thomas F., 586 Bergen St., Brooklyn.. ....81.10
Gaynor, Joseph H., 475 West 165th St.81.10
Keenan, James J., 909 Amsterdam Ave..81.10
Cassidy, Charles J., 66 North 8th St., Brooklyn 81.00
Hyland, Maurice J., 33 Grove St.....81.00

ASSISTANT STEAM ENGINEER.—Atlanta, Ga.—An examination will be held by the U. S. Civil Service Commission on July 17, to secure eligibles from which to make certification to fill a vacancy in the position of Assistant Engineer, at $[illegible] a year, in the U. S. Penitentiary at A[illegible], Ga., and vacancies as they may occu[illegible] y branch of the service requiring simi[illegible]ifications. The power plant at the Atl[illegible]itentiary contains the following: A ba[illegible] 150 HP. water tube boilers; Webster [illegible]ater heaters and purifiers; Russell [illegible] compound high speed engines, direct c[illegible]d to electric generators of 75 KW [illegible]city each; complete electrical equipme[illegible] and incandescent lights, power [illegible] and tors; Paul system of vacuum [illegible]g elevators and a six ton refrigerating [illegible] and with ventilation by means of [illegible]n heating and pipes storage rooms. There is [illegible] with cold 'phone central energy tel[illegible] thirty Age limit 20 years. Applicat[illegible] system. [illegible]orm 1063.

READERS' WANTS

If you are in the market [illegible] material, equipment or supplies, and [illegible] to find it in our advertising pages, send [illegible] full particulars, and we will gladly [illegible] you in touch with the right parties.

Also ask for our BUYE[illegible] GUIDE

AUTOMATIC TOLL COLLE[illegible]ING DEVICE.—Birmingham, Ala.—Ja[illegible] L. Montgomery, Box 779, Birmingham, Ala., writes us that he desires to communi[illegible] with parties manufacturing an automa[illegible] device for collecting toll on foot bridges.

CATALOGS, ETC.—Denver, Colo.—We are informed that R. C. Hardm[illegible] 207 Commonwealth Bldg., Denver, Colo., is desirous of receiving catalogs, etc., which will be of value in a civil engineering office.

CATALOGS, ETC.—Pittsburg, Pa.—We are in receipt of a letter from the Carnegie Technical Schools, Pittsburg, Pa., stating that the Department of Mechanical Engineering Practice of the Carnegie Technical Schools is starting a catalog file and requests manufacturers of machinery to send their catalogs in care of Prof. Trinks, Carnegie Technical Schools, Pittsburg, Pa. Complete information is desired on all lines of mechanical work from boilers and engines to automatic and special machinery.

INDUSTRIAL NOTES.

THE EXETER MACHINE WORKS and the plant of the Page Boiler Co., Exeter, N. H., were damaged to the extent of $5,000 by fire June 9.

THE C. A. MFG. CO., Austin, Tex., has appointed Mr. Geo. H. Erich, 358 Dearborn St., Chicago, as sales agent for Chicago and that vicinity.

THE CUTLER HAMMER CO, Milwaukee, Wis., manufacturers of electric controlling devices, has purchased the Wirt Electric Co., of Philadelphia, Pa., and will continue the manufacture of the Wirt Apparatus.

THE EVENS & HOWARD FIRE BRICK CO., St. Louis, Mo., desires to deny rumors recently circulated to the effect that the company was in any way connected with the so-called merger of St. Louis fire clay interests.

THE KNEELAND MFG. CO., Lansing, Mich., manufacturer of gas and gasoline engines, has purchased the plant of the Anderson Foundry & Machine Co., Battle Creek, Mich., according to reports, and removed to the latter city.

CHAS. C. MOORE & CO., San Francisco, agents for the Babcock & Wilcox boiler, have been appointed selling agents on the Pacific coast for the Stirling boiler. Mr. Kinsell, formerly agent for the latter boiler, has retired from this line and will engage in other business.

AT A SPECIAL MEETING of the directors of the Joseph Dixon Crucible Co., on May 31, the vacancies made by the death of Mr. John A. Walker, Vice-President and Treasurer, were filled by the following elections: Mr. Geo. T. Smith, Vice-President; Mr. Geo. E. Long, Treasurer, and Mr. Harry Dailey, Director and Secretary.

THE ELLIS COMPANY, 216 West 23d St., New York, manufacturers of improved automatic sewage ejectors, announces that, by reason of its increased business, it has opened a branch office in Philadelphia, in the R. D. Wood & Co. building, 36 South 16th St. The office is under management of Mr. James R. Austin, who will cover the territory included in the States of Pennsylvania, Ohio, Virginia, West Virginia, Delaware, District of Columbia and Maryland.

THE STONE & WEBSTER ENGINEERING CORPORATION, Boston, Mass., has recently placed contracts for new equipment for the Pawtucket Electric Co., including 6 250-HP. B. & W. boilers equipped with Foster superheaters for 150 degrees superheat. This boiler room equipment is practically a duplicate of that recently ordered by the Texas Traction Co., of which the Fred A. Jones Co., of Houston, are Consulting Engineers, for operating the Curtis turbines in the new power station at McKinney, Texas.

THE TERRY STEAM TURBINE CO., of Hartford, Conn., has secured an order for eight 300-HP. steam turbines for the new Waterside plant of the N. Y. Edison Co., 39th St., and First Ave., New York City. These turbines are to be used direct connected to centrifugal pumps and are for boiler feed purposes. The capacity of each turbine pump unit will be 1,000 gallons per minute, against a pressure of 300 lbs. This is probably the largest order for turbine driven centrifugal pumping machinery for boiler feed purposes ever placed.

WILLIAM B. SCAIFE & SONS Co., Pittsburg, Pa., report that on account of the large number of orders for the [illegible] and We-Fu-Go water softening and purifying systems received they have been obliged to increase their shop capacity for building these systems. An addition to the present shops

at their works at Oakmont, Pa., has just been completed, in which they are installing special machinery to increase their output. Among some of the orders for the Scaife and We-Fu-Go systems are the following: Liberty Silk Dyeing Co., Allentown, Pa., 600,000-gallon per 24 hour We-Fu-Go system; American Sheet & Tin Plate Co., Guernsey Works, Cambridge, Ohio, 2,000 HP. We-Fu-Go system (18th contract); Illinois Central R. R. Co., Decatur Ill., 250,000 gallon per day We-Fu-Go system (10th contract); Standard Underground Cable Co., Pittsburg, Pa., 500 HP. Scaife system; Crystal Laundry, Cumberland, Md., 3,000 gallon per hour We-Fu-Go system; George J. Renner, Jr., Brewery, Youngstown, Ohio, 500 HP. Scaife system; James McKay & Co., McKees Rocks, Pa., 500 HP. Scaife system; George Wiedemann Brewing Co., Newport, Ky., 1,250 HP. We-Fu-Go system; National Malleable Castings Co., Indianapolis, Ind., 1,000 HP. We-Fu-Go system; D. M. Bare & Co., Roaring Springs, Pa., 2,000 HP. Scaife system.

THE B. F. STURTEVANT CO., of Boston, Mass., reports that mechanical draft apparatus is to be furnished by the company for boilers in the following power plants: Penna., Ft. Wayne, Chicago Ry., Allegheny, Pa.; Acushnet Mills, New Bedford, Mass.; State Hospital for the Insane, Howard, R. I.; Syracuse Malleable Iron Works, Syracuse, N. Y.; Union Light, Heat & Power Co., Fargo, N. D.; The Fisheries Co., Fall River, Mass.; Wood Worsted Mills, Lawrence, Mass.; El Paso Elec. Ry. Co., El Paso, Texas; Russia Cement Co., Anacortes, Wash.; and Hazard Mfg. Co., Wilkes-Barre, Pa.

TRADE PUBLICATIONS.

FOUNDRY COSTS.—Gunn, Richards & Co., New York and Chicago. Paper; 4¾ × 8 ins.; pp. 11.

This pamphlet is entirely a dissertation on the advantages of accurate cost keeping.

BLACKSMITH TOOLS.—Buffalo Forge Co., Buffalo, N. Y. Paper; 3½ × 6½ ins.; pp. 8; illustrated.

This pamphlet is descriptive of portable forges and blowers, plate punches and shears, and wall-drills of various types. Prices are given.

WELLS AND WELL SUPPLIES.—The Cook Well Co., St. Louis, Mo. Leather; 4½ × 7¾ ins.; pp. 50; illustrated.

Cook's strainers and various other well supplies are illustrated and described in this catalogue, together with a variety of well pumps.

SPINDLE DRILL.—The Knecht Bros. Co., Cincinnati, Ohio. Paper; 3½ × 6 ins.; pp. 14; illustrated.

The design, equipment and specifications of a friction driven spindle drill, for drilling holes up to 9-16 ins., are outlined in this small publication.

AUTOMATIC ENGINE STOP.—The Locke Regulator Co., Salem, Mass. Paper; 9 × 6 ins.; pp. 32; illustrated.

A complete treatise on the Locke automatic safety devices as applied to steam engines and rotary converters is contained in this booklet.

ASBESTOS COVERINGS.—H. W. Johns-Manville Co., 100 William St., New York City. Paper; 3½ × 6 ins.; pp. 16; illustrated.

"Asbestos Roofing and Siding" and "Keystone Range Boiler Covers" are the titles for two flyers, describing two asbestos products of this concern.

PUMPS, AIR.—The Goulds Mfg. Co., Seneca Falls, N. Y. Paper; 3½ × 6 ins.; pp. 8; illustrated.

This little booklet describes small hand and belt-driven air-pressure and vacuum pumps suitable for use in inflating automobile tires, as gas-engine starters, with sprinkling systems, etc.

COMBINATION STEEL AND WOOD TIES.—Thomas A. Galt, Sterling, Ill. Paper; 6 × 8 ins.; pp. 4; illustrated.

This tie consists of two steel channels with two wood blocks 6 × 8 ins., 24 ins. long, fitted between them to carry the rails. The parts are bolted together. Ties of a similar design are used in France.

CONCRETE FENCE POSTS.—H. S. Quick & Co., 31 N. Pennsylvania St., Indianapolis, Ind. Paper; 4 × 8¼ ins.; pp. 8; illustrated.

This describes a post having cast-iron sockets to receive a special spring attachment for fence wires. The post is reinforced with a steel bar. Post molding machines and the Standard concrete mixer are also described.

PUMPING ENGINES.—Allis-Chalmers Company, Milwaukee, Wis., Bulletin 1600. Paper; 8 × 10½ ins.; pp. 28; illustrated.

This bulletin describes some official duty tests of three pumping engines, at Bissell's Point Pumping Station, St. Louis, Mo. The highest duty reached was 181,068,605 ft. lbs. per 1,000 lbs. of steam.

ELEVATORS FOR SAND AND GRAVEL.—Shoemaker & Casparis, Newcomerstown, Ohio. Paper; 6¼ × 9¼ ins.; pp. 8; illustrated.

The elevators described in this pamphlet are of the portable railway type for loading cars. Contractors with that sort of work to do will find it an interesting pamphlet.

SMALL TOOLS.—Pratt and Whiting Co., Hartford, Conn. Paper; 4¾ × 7¼ ins.; pp. 216; illustrated.

In addition to a vast amount of information, useful for tool rooms, about screw threads, tap, dies, milling cutters, reamers, twist drills, dies and gages, descriptions and prices of small machine accessories are conveniently placed.

ROD HEATING FURNACES.—Rockwell Engineering Co., 26 Cortlandt St., New York. Paper; 6 × 9 ins.; 4-page folder; illustrated.

This pamphlet is merely a combination of diagram and table as a guide to the prospective purchaser in determining the size required. Both oil and gas fuel are provided for.

BOLT HEATING FURNACES.—Rockwell Engineering Co., 26 Cortlandt St., New York. Paper; 6 × 9 ins.; 4-page folder; illustrated.

This pamphlet is merely a combination of diagram and table as a guide to the prospective purchaser in determining the size required. Both oil and gas fuel are provided for.

PUMPS, SPRAYING.—The Goulds Mfg. Co., Seneca Falls, N. Y. Paper; 3½ × 6 ins.; pp. 8; illustrated.

This pamphlet describes, with some interesting comparative figures between brush-painting and spray-painting, several different varieties of pumps for spraying such materials as whitewash, paint, insecticides, etc.

ROADS AND ROAD ROLLERS.—The Petrolithic Pavement Co., Los Angeles, Cal. Paper; 9 × 6 ins.; illustrated.

This pamphlet is devoted to the use of asphaltic oil and of the form of road roller described in Engineering News of April 4 and May 16, 1907. A considerable number of views of roads improved with petrolithic pavement are included.

REINFORCED-CONCRETE TIES.—C. A. Vedder, Galveston, Tex. Paper; 3½ × 6¼ ins.; pp. 12; illustrated.

The Percival tie described in this pamphlet is of approximately triangular section, with hardwood cushion blocks for the rails. The fastenings are screw spikes entering threaded sockets in the ties. The illustrations show the ties in use on different railways.

ELECTRIFICATION OF A RAILWAY SHOP.—Westinghouse Electric and Mfg. Co., Pittsburg, Pa., Industrial Series 13,301. Paper; 6 × 9 ins.; pp. 24; illustrated.

This attractive pamphlet describes the electrical equipment of the Erie Railroad shops at Hornellsville, N. Y. The general conditions under which the electrical service was applicable are portrayed, as well as the details of different drives for special tools.

THE REINFORCING OF CONCRETE.—Inland Steel Co., Chicago. Paper; 5 × 7¾ ins.; pp. 32; illustrated.

This pamphlet discusses the economy and efficiency of different methods of reinforcement, with special regard to the use of the company's high-carbon twisted steel bars for this purpose. There is also the description of an accident in which a falling derrick boom failed to injure the reinforcing bars in a concrete roof.

HOISTING ENGINES.—Lidgerwood Mfg. Co., 96 Liberty St., New York. Paper; 8¾ × 11¾ ins.; pp. 8; illustrated.

This describes the new line of Lidgerwood electric hoisting apparatus. Both the street railway type of control and the lever type, in which the motions are the same as in the control of steam hoists, are described and illustrated. The mast hoist shown in this bulletin was described in our issue of May 30.

ELECTRICAL MACHINERY.—The Triumph Electric Co., Cincinnati, O. Bulletin 311. Paper; 6½ × 10 ins.; pp. 20; illustrated.

"Motores y Generadores de Armazon de Aeero, Tipo Encerrado," is the Spanish title of a special bulletin treating this concern's line of steel frame generators and motors. This has been arranged to accommodate the export trade, and takes up mechanical and electrical construction, applications, dimensions, cocks, etc., etc.

ELECTRICAL APPARATUS.—Fort Wayne Electric Works, Fort Wayne, Ind.; four bulletins. Paper; 8 × 10½ ins.; illustrated.

Bulletin No. 1092 contains four pages about a line of single phase motors from ¼ to 15 HP.

Bulletin No. 1091 has eight pages, giving the mechanical and electrical features of a standard line of direct current motors, both open and enclosed forms.

Bulletin No. 1093, in eight pages, contains descriptions of construction and applications of small power motors from 1/100 to 1/30 HP. for both alternating and direct current.

Bulletin 1086 shows detailed construction of the Wood System, direct current, series, enclosed arc lamp.

BOILERS.—Robb-Mumford Boiler Co., Boston and New York. Paper; 7 × 8 ins.; pp. 40; illustrated.

Clearly illustrated, this catalogue performs well its task, which is to bring to the public the advantages of the Robb-Mumford type of boiler without stays and with internal furnace. The catalogue describes boilers in batteries, as well as semi-portable and portable boilers, one of the latter type on wheels being shown. Data are given of a test made at the North Andover water-works.

WATER PURIFICATION.—William M. Booth, Chemical Engineer, Dillage Building, Syracuse, N. Y. Paper; 6 × 9 ins.; pp. 8; illustrated.

Water Softening and Purification for boilers and commercial purposes is outlined in this pamphlet for a system whose details are to be arranged by a consulting chemist to provide for local conditions. The success of the valveless "Fraction Stream" method is shown.

BOILER FEED-WATER HEATER.—Warren Webster & Co., Camden, N. J. Paper; 3½ × 6 ins.; pp. 24; illustrated.

This small pamphlet lays down some requirements that a good feed-water heater should follow, such as continuous operation, water purifying, oil separating, facility for cleaning, etc. Figures are given on actual coal economy by the use of the Webster appliances.

MECHANICAL DRYERS.—The C. O. Bartlett & Snow Co., Cleveland, Ohio. Catalogue No. 16. Paper; 9 × 6 ins.; pp. 60; illustrated.

Rotary dryers for direct and indirect heating by steam or hot air, and with one or more compartments are described. They are made in various sizes for drying all kinds of materials. The catalogue gives sizes, capacities, prices and a long list of users of machinery by this company.

ROLLING DOORS.—The Kinnear Manufacturing Co., Columbus, Ohio. Two booklets; paper; 4 × 9 ins.; illustrated.

One of these publications describes the "Kinnear" wood door for round houses or other structures, where doors are subjected to acidulous gases. These doors are made of specially treated wooden strips, and roll up in a manner similar to the "Kinnear" steel doors. The second booklet deals with "Kinnear" steel doors for car barns.

ROCK CRUSHERS.—The Allis-Chalmers Co., Milwaukee, Wis. Bulletin 1415. Superseding Catalog 117; paper; 8 × 10½ ins.; pp. 28; illustrated.

This bulletin is devoted to a history and description of the Gates gyratory type of rock and ore breaker. A clear description of the method of operation of this type of breaker is supplemented by descriptions and cuts of various styles manufactured by this company.

SMALL ALTERNATING CURRENT GENERATORS.—Allis-Chalmers Co., Electrical Dept., Milwaukee, Wis. Bulletin 1060. Paper; 8 × 10½ ins; pp. 12; illustrated.

A new line of machines for plants requiring a belted generator of less than 150 KW. capacity is herein described. The machines are shown with rotating field construction and without bed plate. The frame legs rest immediately on the sliding rails.

CRUSHING AND ROAD MACHINERY.—The Climax Road Machine Co., Marathon, Cortland Co., N. Y. Annual catalog; paper; 8 × 10½ ins.; pp. 24; illustrated.

Ore and stone crushers for mining and general use, as well as road making and improving machinery and various dirt moving apparatus, are described and illustrated in this catalog. The bridge building department of the company receives special attention.

LOCOMOTIVES.—American Locomotive Co., 111 Broadway, New York, N. Y. Paper; 9 × 6 ins.; pp. 60; illustrated.

The mogul or 2-6-0 type of locomotive for freight service is dealt with in this pamphlet, and engines of 25 different roads (including four foreign railways) are illustrated. They are all simple engines, with cylinders ranging from 13 × 20 ins. to 21 × 28 ins. The driving wheels range from 38 to 69 ins. in diameter, and the total weights from 49,000 lbs. to 187,000 lbs.

ROCK DRILLS.—Ingersoll-Rand Co., New York. Booklet 20 A. Paper; 3½ × 5 ins.; pp. 20; illustrated.

This little pamphlet describes the new Temple-Ingersoll electric-air drill. It is an air drill with a two-hose connection to a compressor without intake or discharge valves, called a "pulsator." This is direct-connected to an alternating or direct-current motor mounted on a steel truck. The speed of the pulsator is controlled by the operator at the drill. Cuts show the outfit in various classes of work.

"MODERN PRACTICE IN AIR COMPRESSION."—The Sullivan Machinery Co., Railway Exchange, Chicago. Catalog No. 58; paper; 6 × 9 ins.; pp. 112; illustrated.

With the many pages of information on compressed air engineering to be found in this catalog, it makes a book of some value as a supplementary text book on the subject of which it treats. The illustrations of service conditions, in mines, etc., are excellent in appearance and detail.

SEWAGE FILTER.—F. Wallis Stoddart, Bristol, England. Paper; 9¾ × 6 ins.; pp. 15; illustrated.

Views, with very brief descriptions, are presented of some selected examples of the Stoddart continuous filter. The Stoddart filter is of the percolating type. The sewage is distributed over it by means of perforated corrugated sheet metal distributors. The filter has been developed by Mr. F. Wallis Stoddart, Public Analyst for Bristol, Salisbury and Bridgewater, England.

RAIL JOINTS AND TRACK APPLIANCES.—Quincy, Manchester, Sargent Co., Old Colony Building, Chicago. Paper, 6 × 9 ins.; six pamphlets; illustrated.

Two of these pamphlets relate to the Bonzano rail joint, in which the broad horizontal flanges of the angle-bars are bent down below the rail for the space between the ties. Other specialties are anti-creeping devices for rails, the Fewings car replacer or renailing frog, the Samson rail bender, and the Ajax diaphragm for connecting the vestibules of railway cars.

ELECTRIC TRAVELING CRANES.—The General Pneumatic Tool Co., Montour Falls, N. Y. Bulletin No. 58; paper; 8 × 11 ins.; pp. 19; illustrated.

A detailed description of the features of this company's cranes is given, supplemented by illustrations of parts. Some photographs of equipments already installed occupy a third of the pamphlet. A convenient binder of stiff, durable paper is furnished for those who wish to file the serial bulletins as they are issued.

ELECTRIC MOTOR CONTROLLING DEVICES.—The Cutler-Hammer Mfg. Co., Milwaukee, Wis. Paper; 8 × 5 ins.; pp. 220; illustrated.

This is a collection of bulletins and price lists of rheostats, regulators, controllers, switches, self-starting devices and other electric appliances for use in connection with the control of electrically operated pumps, elevators, machine tools, printing presses and other classes of machinery.

PUMPS, STEAM.—The Canton-Hughes Pump Co., Canton, Ohio. Paper; 6 × 3½ ins.; pp. 64; illustrated.

This booklet consists entirely of illustrations of the various and sundry pumps manufactured by this company. Descriptive matter is confined to a brief jotting beneath each illustration. The pumps illustrated include boiler feed pumps, ballast pumps, compound high-duty pumping engines, air compressors, blowing engines for breweries, refineries, etc., and tar pumps.

ALTERNATING CURRENT GENERATORS.—General Electric Co., Schenectady, N. Y. Bulletin 4393 C. Paper; 8 × 10½ ins.; pp. 8; illustrated.

This pamphlet describes a new line of rotating field alternators from 50 to 240 KW. with direct-connected exciters. The exciter field frame is mounted by feet to the armature frame and the exciter armature is carried by an extension of the rotor shaft. Mechanical and electrical features are described, and voltages, temperature rises, ratings, weights and dimensions are given.

REINFORCED CONCRETE CONSTRUCTION.—Aberthaw Construction Co., Boston, Mass. Paper; 6 × 9 ins.; pp. 24; illustrated.

It is not often that any one company has such a variety of good work to its credit as the one noted above. Its field covers the construction of the Howard Stadium, the largest concrete standpipe, numerous mills and factories throughout New England, the large concrete coal-pockets at Hartford and some dams of the Ambursen type. All of these are described in the catalogue.

REINFORCED-CONCRETE CONSTRUCTION.—Expanded Metal & Corrugated Bar Co., St. Louis, Mo. Paper; 10¼ × 8¼ ins.; pp. 112; illustrated.

The remarkable development of reinforced concrete construction in bridge and building work is made clear to any one who reads this catalogue prepared by the owners and makers of the Johnson bar system. This year's issue is in much larger and ornate form than have been those of previous years, including photographs of new work not heretofore published, together with the usual descriptions of systems and methods of and basis for computing reinforced concrete units.

ELECTRIC LAMPS.—The National Electric Lamp Association (Engineering Department), 4411 Hough Ave., Cleveland, O. Paper; 6 × 9 ins.; six bulletins, pp. 4 to 20; illustrated.

The engineering department of this association is maintained by a number of electric supply companies, and its bulletins relate to various kinds of lamps, with their lighting power, etc., as developed by tests in the department's laboratory. Two of the bulletins deal with the association and its engineering department, the others relate to metallized-filament lamps, the tantalum lamp and the tungsten lamp.

CROSSING SIGNALS AND SIGNS.—The Railroad Supply Co., Chicago. Paper; 6 × 9 ins.; pp. —; illustrated.

This pamphlet shows a variety of warning signs for grade crossings. They have steel I-beam posts and cast-iron arms, and are fitted with electric bells. The bell apparatus and the wiring systems are described in detail. There is also a post with electric bell for use at sidings to enable trainmen to communicate with the signalman or telegraph operator, as in advising him when they have cleared the main track.

STANDARD CONCRETE STEEL CO., 415 E. 31st St., New York City, Filing Blanks for the Bureau of Buildings.

For the convenience of architects using the systems of fireproof floor construction invented by Mr. Guy B. Waite, M. Am. Soc. C. E., and controlled by this company, a series of sheets have been printed showing the several styles of construction, and requiring only the filling in of a few blanks to make it ready for filing with the Building Department.

REINFORCING METAL FOR CONCRETE.—Aberthaw Construction Co., Boston. Paper; 6 × 9 ins.; pp. 11; illustrated.

The development of the reinforced concrete industry naturally has brought on the market a multitude of bars, rods and trusses for the proper reinforcing of the concrete. The Aberthaw Company advocates the use of cold twisted bars for straight reinforcement and of the pin-connected girder frame for the assembled type where such a type is desired. These two are fully described in the pamphlet.

LOCOMOTIVES.—J. A. Maffei, Hirschau Iron Works, Munich, Germany. Paper; 8¾ × 5¾ ins.; pp. 26; illustrated.

This is a beautiful example of high-class foreign work, having tinted plates of a number of powerful passenger locomotives built by these works. There is also a steam motor car, whose motor truck is illustrated separately. A small four-wheel tank engine for light railways has the cylinders between the wheels, with piston rod and connecting rod at each end, no coupling rods being used. Lists of dimensions are given, but there is no descriptive matter.

PRESSURE FILTERS FOR TREATMENT OF SLIME IN CYANIDE PROCESS.—Blaisdell Co., Los Angeles, Cal.

"The treatment of the slime, or finer portion of the mill pulp, is one of the most troublesome and expensive steps in the extraction of gold and silver by the cyanide process." The Blaisdell pressure filter has been devised to meet this difficulty. Diagrams showing the operation and installation of the filter plant, as well as detail cuts of portions of the device, make the pamphlet an addition to the files of any one interested in cyanide milling.

STEAM-HEATING AUTOMATIC VACUUM SYSTEM.—Illinois Engineering Co., Chicago and Toronto. Paper; 6 × 9¼ ins.; pp. 40; illustrated.

This catalogue is prepared, say the publishers, in compliance with numerous requests for literature descriptive of this system. The name of the system is more or less descriptive of its operation, the proper circulation of steam being ensured by vacuum automatically obtained. Tables are given of back-pressure on engine pistons where exhaust steam is used, diagrams are given of the piping system used, and a number of photographs of buildings shown in which the system is installed.

ROCK DRILLS AND QUARRYING MACHINERY.—Sullivan Machinery Co., Chicago, Ill. Paper; 6 × 9 ins.; pp. 113 to 140A; illustrated.

The May issue of "Mine and Quarry," a quarterly bulletin of news for superintendents, managers, engineers and contractors, published by the Sullivan Machinery Co., contains interesting articles and photographs of the Panama Canal, a photograph of a mine explosion, an article on "Western Practice in Tunnel Driving," one on "Economy in Quarrying Slate," one on "Coal Mining at Bicknell, Indiana," and one on "Mineral Prospecting at Cobalt." Mining men will find this issue of the bulletin quite interesting.

TILE-CONCRETE CHIMNEYS.—Atlas Construction Co., 912 Victoria Building, St. Louis, Mo. Paper; 4 × 9 ins.; pp. 23; illustrated.

In the Wiederholdt system of construction, the stack is of hollow tile blocks, forming an inner and outer shell, with connecting diaphragm. Horizontal and vertical reinforcing rods are placed within the blocks and the interior space filled with concrete. A number of these smokestacks are shown, the highest of which is 157 ft. The cost and methods of construction are described.

CONVEYORS AND ELEVATORS.—Stephens-Adamson Co., Aurora, Ill. Paper; 6 × 9 ins.; two pamphlets; pp. 78 and 24; illustrated.

The larger of these pamphlets deals with rubber and canvas belt conveyors, together with the rolls, discharge chutes, trippers and other parts. A number of conveyors are illustrated, and their application for handling various materials is described. The smaller pamphlet relates to bucket elevators, car hauling winches for industrial plants, and the Gilbert carical washing screen for sand and gravel screening plants using the wet process.

REINFORCED CONCRETE CONSTRUCTION.—Trussed Steel Concrete Steel Co., Detroit, Mich. Paper; 9½ × 12½ ins.; pp. 24; illustrated.

The title of this pamphlet is "The Typical Factory; exemplifying the possibilities of reinforced concrete according to the Kahn system." It is a description in full detail and with many notes on general design and construction, of the factory for the Pierce Automobile Company at Buffalo, N. Y. The typographical features are exceedingly good and the matter contained should be of great interest to any one interested in large mill-building, whether of steel, brick or concrete.

ABRASIVE MACHINERY.—Royden Marble Machinery Co., 1 Madison Ave., New York. Stiff paper; 9 × 6 ins.; pp. 48; illustrated.

This handsome catalogue deals entirely with abrasive machinery applied to marble work, and supplements exhaustive descriptive matter with photographs and sectional diagrams. A rapid method of laying mosaic floors from spools is described, and an interesting polishing machine for finishing such floors after being laid is also described and illustrated. In the back of the pamphlet is an article on abrasives by J. Royden Peirce, which appeared in Engineering News for June 6.

DRYING BRICK AND TILE.—The Green Fuel Economizer Co., Matteawan, N. Y. Paper; 6 × 9 ins.; pp. 16; illustrated.

This booklet discusses the philosophy of artificial drying in general. It then takes up different means by which brick, tile and similar products may be dried by the use of exhaust or live steam, or from the emanations from kilns that are cooling off. Data are given showing that the installation of a suitable artificial drying system will so increase the yearly output of a brick plant that the enlarged capacity will more than offset the first cost of the apparatus. It is also set forth that by reducing the labor of handling, lessening the waste, and giving a better product, a dryer utilizing waste heat will generally pay for itself during the first year.

OIL FILTERS.—The Burt Mfg. Co., Arkon, O. Paper; 6 × 9¼ ins.; pp. 80; illustrated.

There is in this catalogue a general discussion of saving of lubrication oils and oil filtration, particularly by the Burt filtering systems.

A little less than half the publication is devoted to a second product of this concern—ventilators. The necessities and requirements of factory ventilation are laid down and notable installations of Burt ventilators described.

A few pages are devoted to a line of exhaust heads.

ELECTRIC LIGHTING APPARATUS.—The General Electric Co., Schenectady, N. Y. Bulletins. Paper; 8 × 10½ ins.; illustrated.

Bulletin 4394B is the third edition of a pamphlet describing small belt driven alternators of 30 to 200 KW. capacity.

Bulletin 4494 contains four pages on installations of the Edison "Metallized" filament lamp, with bowl holophane reflectors. Tables of prices and ratings are included.

Bulletin 4497 has four pages devoted to the Security Snap Socket. This socket is a new departure in fittings. In place of the two screws usually used to fasten the cap and shell, are three bayonet-joint catches. The key mechanism is built screwless, and the entire socket is simplified.

Bulletin 4500 devotes eight pages to redesigned and improved, constant current, switchboard panels, for series arc and series incandescent lighting systems. The main changes are: the abolition of the ammeter cables, the improved support, and the increased insulation on plug switches.

A small folder (No 3536) of four pages, 2½ × 5 ins., contains in handy form the General Electric approximate rules for size of wires in three-phase transmisison lines.

DUMPING WAGONS.—The Tiffin Wagon Co., Tiffin, O. Paper; 8 × 7 ins.; pp. 16; illustrated.

A considerable variety of dumping wagons is illustrated and described in this catalogue. The descriptions include dimensions. Wagons and carts for garbage removal, street cleaning purposes, stone and other purposes, are included. Relatively new are the four-bucket steel dumping wagons of 2 yds. capacity, patented in June, 1906. This wagon is designed to supplant wagons with dumping boards used for hauling stone, gravel, dirt, ashes, etc. Each bucket dumps separately, and of course can be used, if desired, for a different class of material. The buckets are made of heavy sheet steel. The wagon bed can be used on any ordinary farm running gear.

REINFORCED CONCRETE CONSTRUCTION.—Reid-Turnbull Construction Co., Philadelphia, Pa. Paper; 9 × 7 ins.; pp. 88; illustrated.

The author of this descriptive catalogue, which consists of illustrations of work built by the company publishing it, has prepared a very valuable set of views and drawings best suited to show to the lay mind the good points of reinforced concrete work. It might be said, however, that his condemnation of steel and brick structures is entirely too marked. The rational reinforced concrete man does not expect his material entirely to supplant steel and knows that claims of its infallibility can never be supported and are sure to raise suspicions in the mind of the unprejudiced prospective buyer.

WELDING PROCESSES.—Goldschmidt Thermit Co., New York. Paper; 9 × 11½ ins.; pp. 16; illustrated.

The Thermit welding process, concerning which this bulletin treats, is based on the discovery that a powder of finely divided aluminum mixed with metallic oxides can be made to react or burn, by simply igniting any two of these particles; that is, that this combustion will continue without any external heat, and that it will produce heat of 5,400° F. Iron oxide, for instance, when made to combine with finely divided aluminum, produces pure iron at 5,400° F. and the time required in the process is only half a minute for any quantity. Numerous examples of this process of welding are illustrated in the catalogue.

AUTOMATIC APPARATUS FOR SEWAGE TREATMENT PLANTS.—Pacific Flush Tank Co., Chicago, Ill. Stiff paper; 9 × 12¼ ins.; pp. 52; illustrated.

There are here included plans and sections of a considerable number of installations of sand, contact and percolating filters, built in various parts of the country and provided with automatic dosing apparatus. Drawings of the automatic apparatus are also included. The installations figured have been designed by various engineers, and the dosing apparatus has been supplied by the company issuing the catalogue. The company controls the United States patent rights of S. H. & M. J. Adams, of England, and of John W. Alvord, W. S. Shields and Sidney W. Miller, of the United States. Mr. Miller is President of the company. A few private installations are included, but most of those illustrated are municipal plants. The pamphlet cannot fail to be of interest to engineers and others having to do with sewage treatment.

For other Proposal Advertisements see pages 55, 56, 57, 58, of Advertisements and Construction News page 234.

COURT HOUSE.

Wilkes-Barre, Pa.

Sealed proposals will be received by the county controller of Luzerne County until 2 o'clock p. m., Thursday, July 18, 1907, for the construction and completion of the ventilating and heating system for the new court-house building of the County of Luzerne, now being erected on river common, on the corner of North River and North streets in the City of Wilkes-Barre, Luzerne County, Pa. Plans and specifications prepared by Messrs. McCormick & French, architects, and blank form of proposals for bids can be seen at the commissioners' office in the court-house on Public Square, Wilkes-Barre, Pa. Every bidder must sign the proposal, copy of which is on file in the commissioners' office of Luzerne County and file a bond with and as a part of the bid. The bond shall be in the amount of the bid and shall be executed by a surety company or by sureties satisfactory to and approved by the commissioners of Luzerne County.

A certified check for 5 per cent. of the amount of the bid must be inclosed in the envelope containing the proposal as a guarantee that the bidder will enter into the contract if his bid is accepted by the county commissioners. All certified checks deposited by bidders, whose proposals shall not be accepted by the County of Luzerne, will be returned to the person or persons or corporations making the same, as soon as the successful bidder has been selected. Bidders must set forth in their proposals their name and place of business and the delivery of a notice to such place of business shall be deemed to be a sufficient delivery and notice to such bidder.

The contract will be let to the lowest and best bidder and if the bidder shall fail to commence work under the contract when required, the amount of the certified check for 5 per cent. of the contract price shall be forfeited to the County of Luzerne without diminishing or impairing its rights to damages.

The County of Luzerne reserves the right to reject any and all proposals and shall not incur any liability hereunder unless contract be executed by the county commissioners.

The bids to be indorsed "Proposals for construction and completion of the ventilating and heating system for the new court-house building in Wilkes-Barre, Luzerne County."

With the name of the person or persons or corporation making same.

JAMES M. NORRIS,
County Controller.

Attest:
JAMES A. DEWEY,
Deputy Controller.
Wilkes-Barre, Pa., June 24, 1907. 26-3t

WATER-WORKS.

Wrentham, Mass.

The Board of Water Commissioners of the Town of Wrentham, Massachusetts, will receive bids for furnishing cast-iron water pipe, gates, hydrants, special castings, one steel standpipe, pumping plant, and bids for the construction work necessary in the installation of a water supply system in the Town of Wrentham. The Commissioners reserve the right to reject any bid or to defer action on any bid. Plans and specifications may be obtained at the office of the Engineer and should be received on or before Wednesday, July 3d, and should be addressed to Edward F. McClennen, Secretary Board of Water Commissioners, Wrentham, Mass.

EDMUND M. BLAKE,
Engineer,
26-1t No. 8 Beacon St., Boston, Mass.

STREET IMPROVEMENT.

Aurora, Illinois.

Bids will be received until 2 o'clock P. M., July 2d, 1907, for constructing brick pavement and combined curb and gutter on portions of Jackson Street and Clark Street in the City of Aurora. Estimated quantities, 18,000 yds. brick pavement and 11,700 ft. combined curb and gutter.

MYRON J. TARBLE,
26-1t City Engineer.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 24, 1907.—Sealed proposals will be received at this office until 3 o'clock P. M., on the 31st day of July, 1907, and then opened, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring of the U. S. Post Office at Owosso, Michigan, in accordance with the drawings and specifications, copies of which may be had at this office or at the office of the Custodian of the site at Owosso, Michigan, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 26-2t

PROPOSALS FOR DREDGING.—U. S. Engineer Office, Tompkinsville, N. Y., June 19, 1907.—Sealed proposals for dredging in San Juan Harbor, Porto Rico, will be received here until 11 A. M., August 7, 1907, and then publicly opened. Information furnished on application. CHAS. L. POTTER, Major, Engrs. 26-3t 5-1t

SITUATIONS OPEN

WANTED—By an important Western Railway System, an Engineer thoroughly familiar with railway yard and terminal design; must be a technical graduate and have had an extended experience in railway work. Salary, $200 per month; permanent position. Advise, age, experience and education. Address "F. B. 26," Engineering News, New York. 26-1t

EXPERIENCED structural detailers wanted in Boston. PURDY & HENDERSON, Paddock Building, Boston. 26-1t

In this Issue: The Hydro-electric Plants Supplying Portland, Oregon. Driving Piles Under the Rapid Transit Ry.—Annual Meetings of the Master Car Builders, American Water Works and Testing Materials Associations.

ENGINEERING NEWS

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Better and cheaper than brick or other material. Demand constantly increasing. We have it in 27, 30 and 36-inch, and all smaller sizes. In business fifty years. Write the manufacturer.
EVENS & HOWARD FIRE BRICK COMPANY, St. Louis, Mo.

Utility
Durability
Economy
Are conspicuously shown in the use of
LARGE SIZES VITRIFIED PIPE
In place of Brick Sewers
Pamphlet, "Vitrified Pipe vs. Brick Sewers"
BLACKMER & POST PIPE CO., St. Louis, Mo.

Vitrified Pipe—Double Strength Extra Heavy Culvert Pipe
All Sizes
MANUFACTURED FROM SHALE
W. S. DICKEY CLAY MFG. CO.
Kansas City, Mo.

MACOMB SEWER PIPE CO. MACOMB, ILL.
Superior Vitrified Sewer Pipe Double Strength Extra Thick Culvert Pipe

ALL SIZES MONMOUTH SEWER PIPE MADE BY
MONMOUTH MINING & MFG. CO., Monmouth, Ill.

Established 1876 | Technical Paints for Metal | Main Sales Office
Works Williamsport, Pa. | Sole Makers NATIONAL PAINT WORKS | 100 William St. New York

SMITH MIXER
See our advertisement on page 65

CHICAGO PORTLAND CEMENT CO.
MANUFACTURER OF
"Chicago AA" PORTLAND CEMENT
53,330 bbls. used in Thebes Bridge 6,550 bbls. used in Kankakee Reinforced Concrete Bridge
1,050 bbls. used in Kenosha Reinforced Concrete Bridge
Hennepin Canal, Government Post Offices, Principal Railroads, Dealers, Concrete Block Manufacturers and Contractors in the Northwest, our patrons
We make one brand only The best that can be made
108 LA SALLE STREET, CHICAGO

85
C-W Alternators supply current for textile mills. Crocker-Wheeler Co., Ampere, N.J.

ESTABLISHED 1866
R. S. BLOME CO.
PIONEERS IN
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Foundations, Floors, Roofs, Sidewalks, etc.
Unity Building L. D. Phone, Central 12
CHICAGO

"WELLS LIGHT"
See our advertisements on pages 9 and 22.

"Lehigh" Portland CEMENT
High Tensile Strength Finely Ground
Light and Uniform in Color
Recommended for High-Class Engineering Work
Manufactured by
LEHIGH PORTLAND CEMENT CO.
ALLENTOWN, PA.
WESTERN OFFICE
725 Rockefeller Building, CLEVELAND, OHIO

EBONITE
Paint-Varnish
For outdoor or indoor work on structural iron, it is absolute protection against corrosion, weather action or acid fumes.
Valuable also as a waterproofing coating for brick walls, for smoke stacks, and all kinds of roofs.
The prices are exceptionally low.
Send for booklet and sample.
BUCHANAN-FOSTER COMPANY
West End Trust Bldg., Philadelphia, Pa.

THE PULSOMETER STEAM PUMP
See our advertisement on page 8.

PIPE DIP
Brick Filler—Roofing—Paints
AMERICAN ASPHALTUM AND RUBBER CO.
Woman's Temple, Chicago

The paint of standard quality for permanent protection of steel, iron and wood.
FEROX
(TRADE-MARK)
HAMMOND, BOYNTON PAINT AND CHEMICAL CO.
Main Office and Factory Norwich, Conn. | New York Office 1418 Flat Iron Building

COVER YOUR STEAM PIPES AND MAKE TIGHT STEAM JOINTS BY USING PATENTED
MINERAL WOOL (Cheap and easily applied) PIPE COVERING AND CORRUGATED (For flanged pipes, cylinders, chests, etc.) COPPER GASKETS
Samples and Circulars free UNITED STATES MINERAL WOOL CO., 140 CEDAR STREET, NEW YORK CITY

Classified Index of Advertisers, Pages 31 to 34. Alphabetical Index of Advertisers, page 39.

PILE PROTECTION

Against Teredo, Limnoria and Other Marine Wood Borers

LOCK JOINT PIPE ON BATTER PILES.

LOCK JOINT PIPE
PATENTED

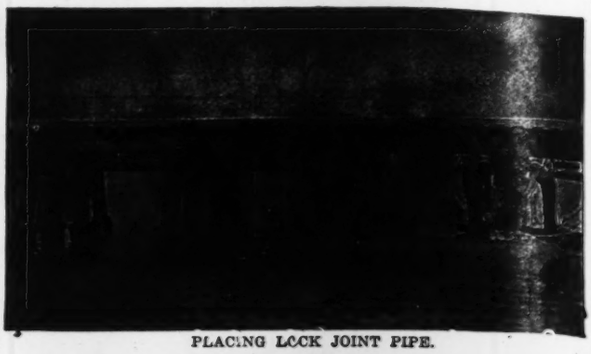
Made of Cement,
Divided into halves,
Placed around piles,
Filled with sand.

Easily applied to old structures as well as to new.

Offers absolute, permanent, safe, and economical protection and is easily inspected.

Made at the site of the structure where it is to be used, saves freight and breakage in transit.

Send for Catalogue and full description.



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MOULDS FOR MAKING LOCK JOINT PIPE.

Lock Joint Pipe Co., 346 Broadway, New York.

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We beg to announce that we have entered into contract with

J. & W. Stewart

Engineers and Contractors in Concrete Construction

for the exclusive construction of Concrete-steel Dams and Hydraulic Construction in general as Associated Engineers and Contractors covering Great Britain, Europe and the British possessions, except the Dominion of Canada.

Messrs. J. & W. Stewart are on the War Office and Admiralty list of the British Government.

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Cable addresses: "Stewart, Contractors, Belfast;" "Eques, London;" "Erect, Dublin."

Our business in the Dominion of Canada is conducted by the Ambursen Hydraulic Construction Co. of Canada, Ltd., Coristine Building, Montreal, P. Q.

Very respectfully,

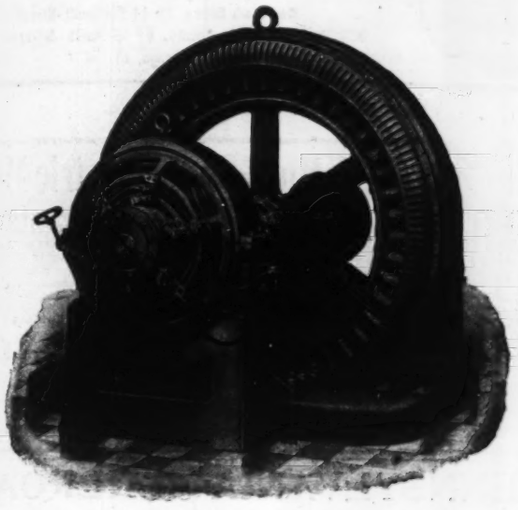
Ambursen Hydraulic Construction Co.

176 Federal Street, Boston, Mass.

Fort Wayne Electric Works
"WOOD" SYSTEMS

Does Appearance Count

For anything when you are considering Electrical Apparatus?



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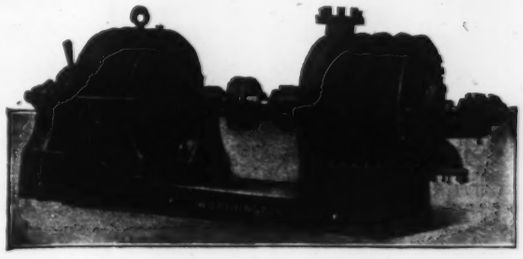
Other Sales Offices — MAIN OFFICE **Fort Wayne, Ind.** — In most Large Cities

533

WORTHINGTON



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are distinguished from other centrifugals by the possession of diffusion vanes, which permit a high lift per stage with good efficiency. These pumps are built in all capacities and for all heads and all services. The efficiency is guaranteed.

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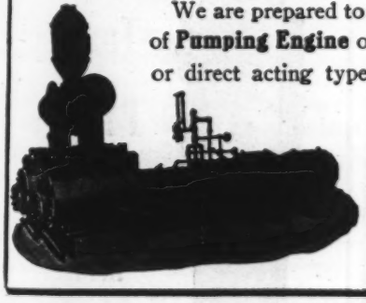
STEAM PUMPING ENGINES



We are prepared to build the most advanced type of **Pumping Engine** of either the crank and fly-wheel or direct acting type, for **Water Works, Mines** or **Irrigation;** and centrifugal where adaptable.

R. D. WOOD & CO.

400 Chestnut Street
PHILADELPHIA

Marine Engine and Machine Company

Office, 126 Liberty Street, New York
Factory, Harrison, New Jersey

BUILDERS OF

GROSHON HIGH-DUTY PUMPING ENGINES

VERTICAL, TRIPLE EXPANSION HORIZONTAL
TRIPLE OR COMPOUND CRANK AND FLY-WHEEL DUPLEX
DIRECT-ACTING HIGH-DUTY

Have you sent in your order for advertising in the

PROCEEDINGS OF

THE MUNICIPAL ENGINEERS OF NEW YORK?

The book will have a circulation of 1500 Copies.

It is read and kept by the engineers who have full and complete charge of all the public works of the City of Greater New York, besides being circulated among the city engineers of every important municipality in this as well as other countries.

Advertising forms close July 31, 1907. For further information address

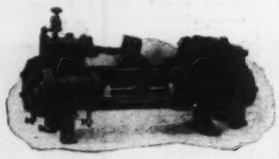
MAX L. BLUM, Editor and Business Manager,
United Engineers' Building, West 39th St., New York City.

Epping-Carpenter Company

PITTSBURG, PA., U. S. A.

Pumping Machinery for Every Service

Pumps with Perfect Balanced Piston Valves



Simple, Compound and Triple Expansion Jet and Surface Condensers

NEW YORK OFFICE
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ROOM 311, 40 DEARBORN ST.

MORRIS MACHINE WORKS

BALDWINSVILLE, N. Y.
Established 1864

Centrifugal Pumping Machinery

An experience of forty years ought to count for something in the building of a centrifugal pump. Let us know your requirements and we will recommend the best pump for your purpose. Correspondence invited.

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S. S. EVELAND, Manager.

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Multi-Speed Electric Motor

Every conceivable speed between highest and lowest points. A fraction of a turn of the hand wheel makes a proportionate change in the speed. THIS RESULT IS ARRIVED AT without auxiliary wiring Rheostat or Controller giving full rated HP at all speeds. We have many in successful operation.

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STOW MFG. CO.

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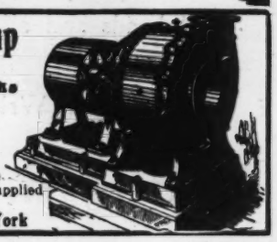
General European Agents: Selig, Sonnenthal & Co., 83 Queen Victoria St., London, Eng.

Special Cataract Centrifugal Pump

Especially adapted for
Dredging, Wrecking, Mining, Water-Works and Sewage Pumping

Patentees and Manufacturers of
Hydraulic Dredging Machinery
Anti-Friction Centrifugal Pump

for all purposes. Capacity 100 to 60,000 gallons per minute. Improved Machinery for Operating Draw Bridges. Water supplied by an improved method of Tube or Pipe Wells.



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"Standard Railroad of America"

THROUGH VESTIBULE SERVICE

Between New York, Philadelphia, Baltimore, Washington, Harrisburg, Pittsburgh, Erie, Cleveland, Toledo, Columbus, Cincinnati, Indianapolis, Chicago, Louisville and St. Louis.

ROUTE OF THE
"Pennsylvania Special" "The Pennsylvania Limited"
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Block Signals
Interlocking Switches
Rock Ballast
Roadbed

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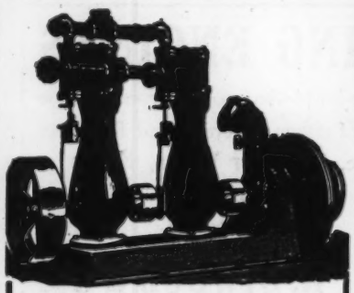
HOOKER PATENT
STEAM PUMPS

Air Compressors *Pneumatic Tools*
Special Machinery

RELIANCE MACHINE AND TOOL WORKS, St. Louis, Mo.



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Centrifugal Pumps

Have been doing so for over *thirty years.* If you want one, write us for *catalogue, prices,* etc.
(We "Hitch 'em up any old way.")

Van Wie Pump Company

SYRACUSE, N. Y.

CENTRIFUGAL PUMPS

Low, Medium and High Duty

Belt-driven or Direct-connected to Engines or Motors

High Efficiency Prompt Delivery

ERIE PUMP AND ENGINE COMPANY
ERIE, PA.

Turbine Pumps

HIGHEST EFFICIENCY

Kingsford Foundry & Machine Works
OSWEGO, N. Y.

MANUEL LLERA, 26 Cortlandt St., N. Y.

LAWRENCE PUMP & ENGINE CO.

P. O. Box 70, Lawrence, Mass.
Designers and Builders of the
Improved "VORTEX" High Grade
CENTRIFUGAL PUMPS
FOR ANY REQUIREMENTS
Catalog E. A. 1 sent on application

AGENTS { Harold L. Bond Co., 140 Pearl Street, Boston. Chas. F. Chase, 39 Cortlandt Street, New York, and The Bourse, Philadelphia.

THE BROOKS CENTRIFUGAL PUMP

THE DAYTON HYDRAULIC MACHINERY CO.

DAYTON, OHIO, U. S. A.

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A Manual of Field and Office Methods

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General Instructions, The Chain and Tape, The Compass, The Level, The Transit, Topographic Surveying, Land Surveying, Railroad Surveying, Errors of Surveying, Methods of Computing, Free-hand Lettering.

Cloth; 4½ × 6½ ins.; 250 pp. Illustrated; $2.00.

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220 Broadway, New York.

ESTABLISHED 1869 — INCORPORATED 1870

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STEAM AND HYDRAULIC TURBINES OF SPECIAL DESIGN

CENTRIFUGAL PUMPING MACHINERY — SPECIAL HEAVY MACHINERY

Land and Marine Boilers — Brass and Bronze Castings — Iron Castings up to 50 tons

LET US HAVE YOUR SPECIFICATIONS
OF SINGLE DUPLEX & ROTATIVE
STEAM AND POWER

PUMPS

THE JOHN H. McGOWAN CO. CINCINNATI

SIMPLE COMPOUND & COMPOUND CONDENSING
ELEVATOR & WATER WORKS
PUMPING ENGINES

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PUMPING MACHINERY FOR ALL PURPOSES

INDIANAPOLIS, IND.

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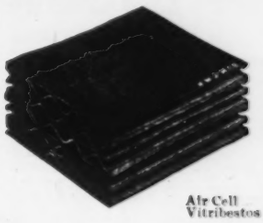
The Highest Achievement in Fireproof Insulating Construction

Smokestack lined with Vitribestos, which is impervious to moisture, absolutely unaffected by the gases of combustion, and the lightest, most durable and economical smokestack protection known.



Air Cell Vitribestos

"Vitribestos" Air Cell Covering is superior for every purpose for which any kind of shaped insulating material may be used. It has remarkable strength—up to 30 tons per square foot—yet is light in weight.

It is extraordinarily fireproof—being unaffected by any degree up to 800° Fahrenheit, and does not fuse under 2500° Fahrenheit, and is the only absolutely waterproof insulation known.

It is easy to apply—can be made in large slabs, in strong cylinders up to six or more feet in diameter by eight or nine feet in length. Can be sawed, drilled, cemented, split and handled like wood.

It has the highest heat-insulating efficiency and is especially superior for high pressure and superheated steam surfaces.

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Branches in all large cities 100 William St., New York

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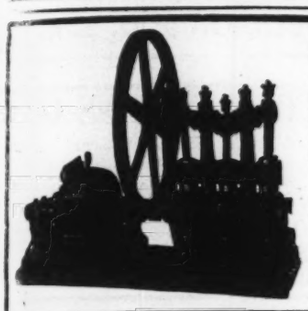

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are adapted for nearly all the requirements of engineering service and represent the highest development of economical power pumping.

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High-Grade **PUMPS** Vacuum Boiler Feed

Pressure and Tank Service

Condensers, Feed Water Heaters, Water Cooling Apparatus

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New York PHILADELPHIA Chicago

Branches:
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Here's a Rugged C & C Motor Driving a Triplex Pump

C & C TYPE "S" PUMP MOTORS ARE BUILT FOR THE WORK

They Have Large Shafts and Solid Back Bearings to Prevent Straining the Motor.

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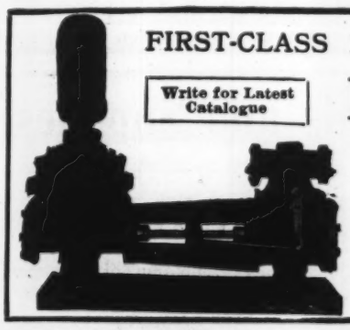
Cleveland, O., Agent, David Gaehr, 1135 Schofield Bldg.
Denver, Colo., Agent, George W. Thornburgh, 1319 Sixteenth Street.



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Pumping Machinery Condensers
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Established 1850

WATER WHEELS

San Francisco, U. S. A.

Exclusive Licensee in Canada

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Steam, Geared AND Electric Driven Deep Well Pumps

KEYSTONE DRILLER CO.

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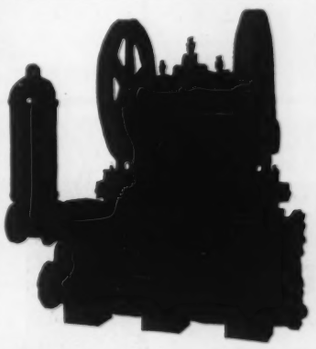

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There is nothing made more economical or durable than

GOULDS EFFICIENT POWER PUMPS

either for open or compression tank systems

The many installations in some of the largest buildings have fully shown their practicability and efficiency for this work

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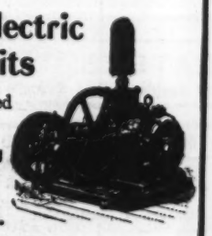
MODERN DESIGN

Special features of merit. For all conditions of service and all kinds of power.

Ideal Electric Outfits

Direct-connected or for belt.



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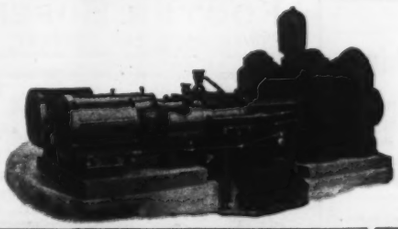
Sixth and Jackson Streets; Anderson, Ind.

PRESCOTT DIRECT ACTING PUMPS

For WATERWORKS



¶ Water end shown has fewer parts and larger valve area than any other make of pump for like service.

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Concrete Expanded into the Earth Allowed to Set and Cement thereto

Greatest Possible Bearing Value Obtained

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THE MEXICAN CONSTRUCTION AND ENGINEERING CO., Ltd., Mexico City, Mexico.

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NATIONAL CONCRETE CONSTRUCTION CO., 54 Board of Trade Bldg., Louisville, Ky.
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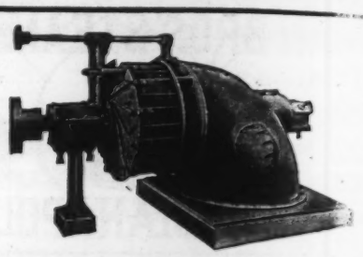
SAMSON TURBINE

We show below, a record of tests made in the official testing flume at Holyoke, of a 35-inch SAMSON TURBINE which was built from the same patterns as those we sell to our customers:

Gateage	Head	R. P. M.	Cu. ft. per sec.	H. P.	Efficiency
Full	15.29	194	102	143	81.08 per cent.
⅞	16.56	188	92	147	84.78 "
¾	17.33	178	84	138	83.88 "
⅝	17.54	176	69	110	80.09 "



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Duplicate Orders Mean Satisfaction

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PELTON WATER WHEELS

sold to the

VANCOUVER POWER COMPANY

1898	One	Pelton Wheel,	600 h.p.
1901	"	" "	900 "
1903	Three	" "	9000 "
1904	One	" "	2000 "
1906	"	" "	3000 "
1907	"	" "	10500 "

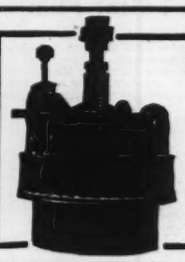
Total, 26000 h.p.

This is the result of HIGH { Efficiency / Mechanical Construction } Reliability

Send for Catalog on Water Power

THE PELTON WATER WHEEL CO.

2241 Harrison St., San Francisco — 142 Liberty St., New York



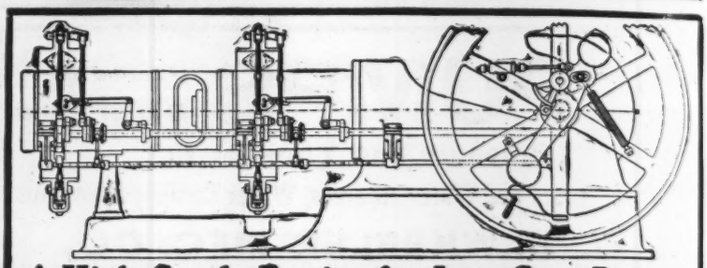
RISDON-ALCOTT TURBINE CO.

MOUNT HOLLY, NEW JERSEY, U. S. A.

RISDON-ALCOTT LEVIATHAN TURBINES | *REGISTER CYLINDER FLUTTER GATES*

WE BUILD TURBINES TO MEET REQUIREMENTS

Catalogue, if interested



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THOMPSON AUTOMATIC CUT-OFF GAS ENGINE

Designed to operate on producer gas

Develops 1 B. H. P. hour per lb. of coal. Regulates within 2 per cent. No licensed engineer required. Affords many advantages over other gas engines and steam engines. Write us.

J. THOMPSON & SONS MFG. CO., Beloit, Wis.

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In Vertical or Horizontal, Single or Double Units, for Open or Steel Flumes, to suit any conditions

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DAYTON, OHIO, U. S. A.

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Machinery, Tools and Supplies

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Each week a few intending buyers notify us of their immediate wants. These items in most cases appear in our Construction News pages under "Readers' Wants."

Engineering News is the only journal in the world that has such a department conducted for the benefit of both buyers and advertisers. This department alone is worth many times the cost of the subscription to the paper. To advertisers it should be worth many times the cost of advertising on account of the information being sent them in advance of publication.

IF YOU ARE IN THE MARKET FOR SUPPLIES notify us at once, no matter in what part of the world you are located, or of the amount of supplies wanted.

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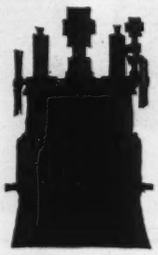

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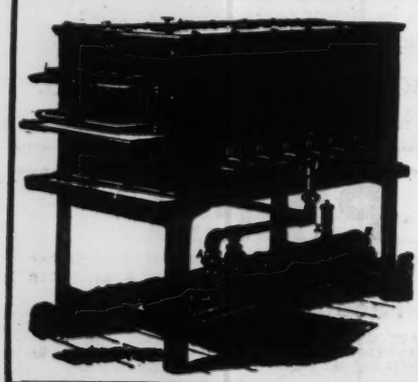

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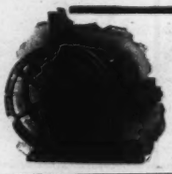

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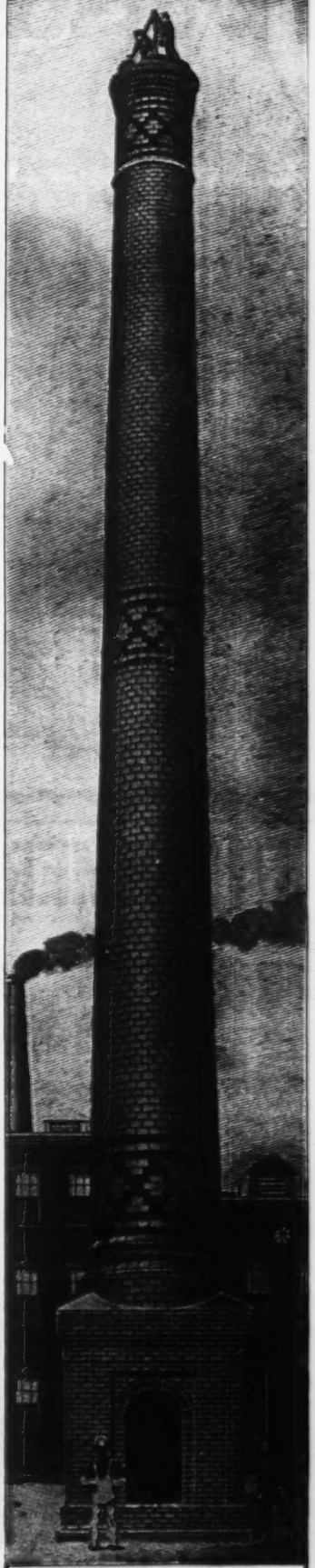

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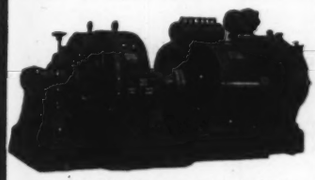

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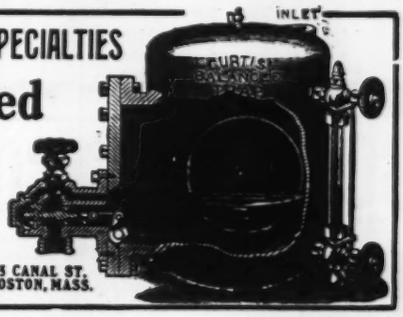

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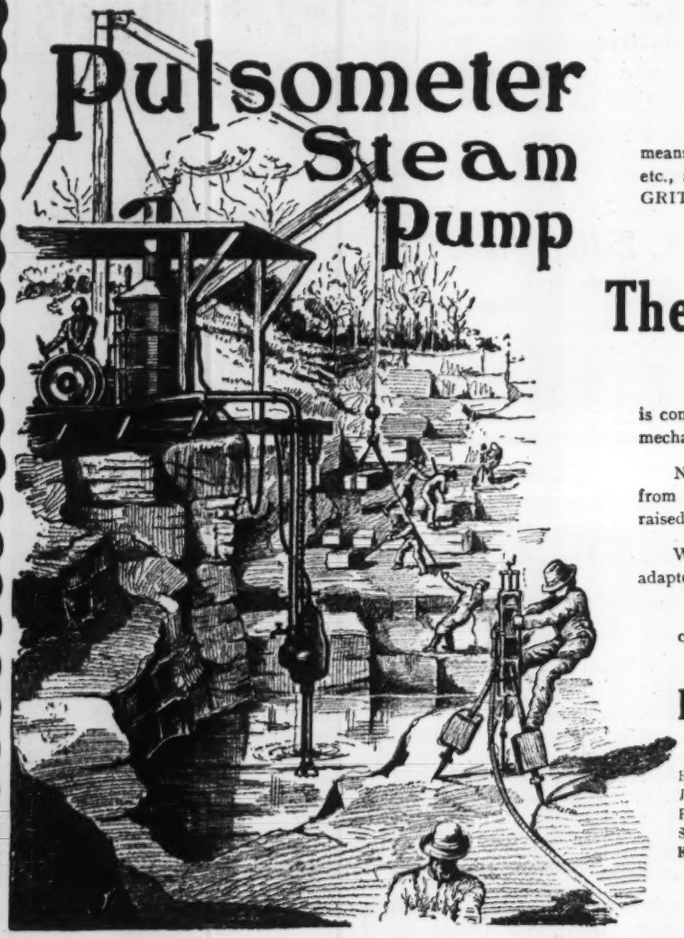

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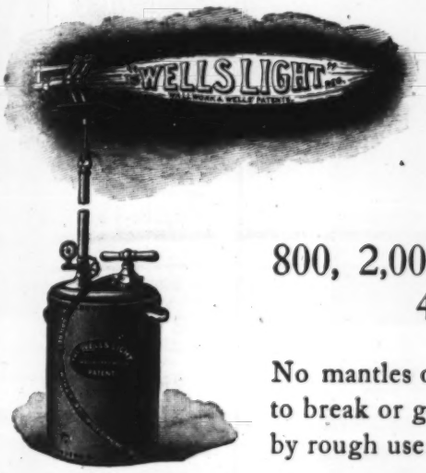

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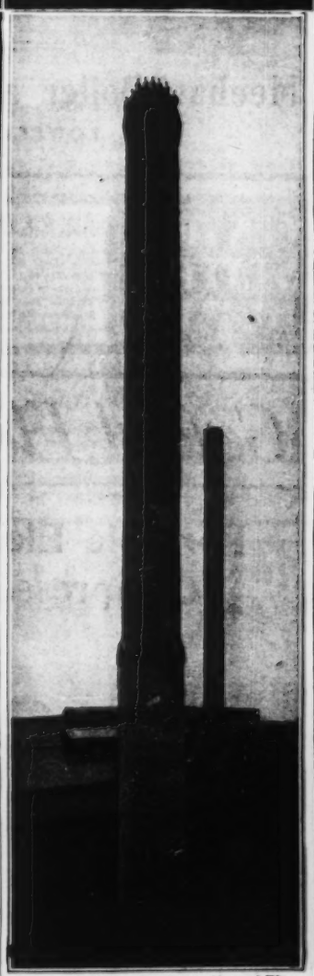

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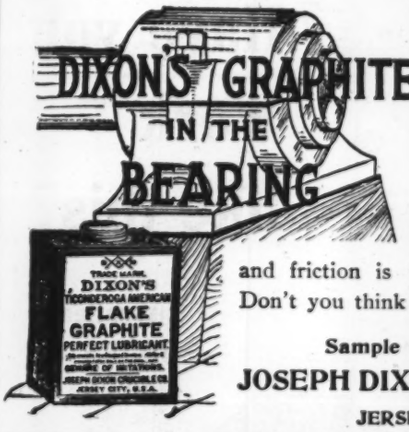

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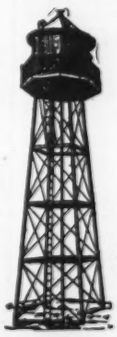

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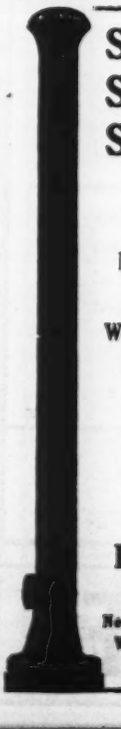

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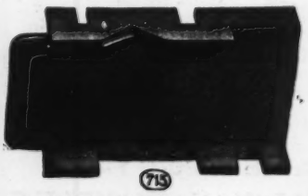

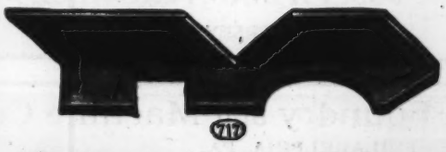

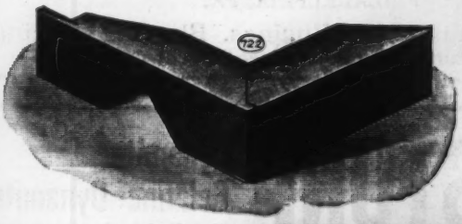

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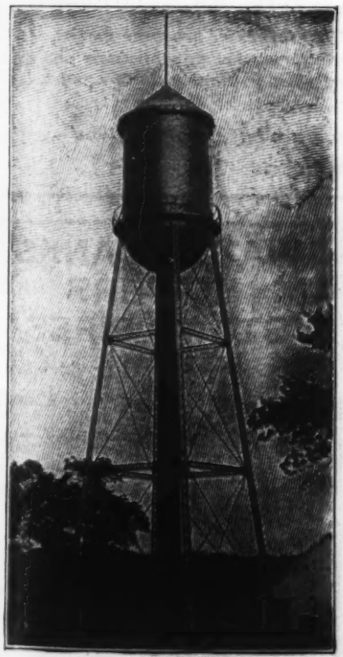

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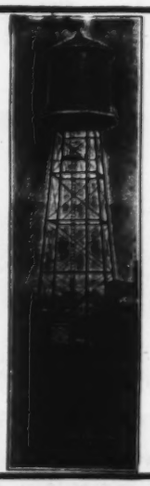

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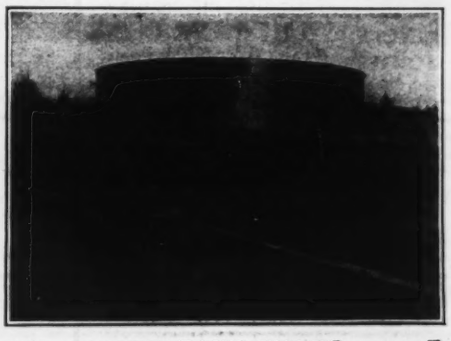

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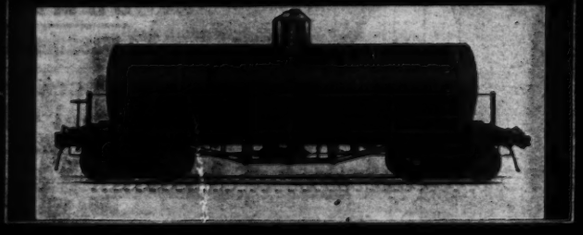

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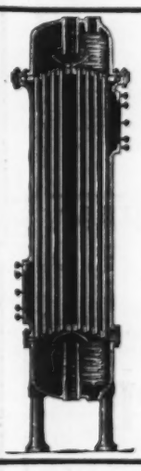

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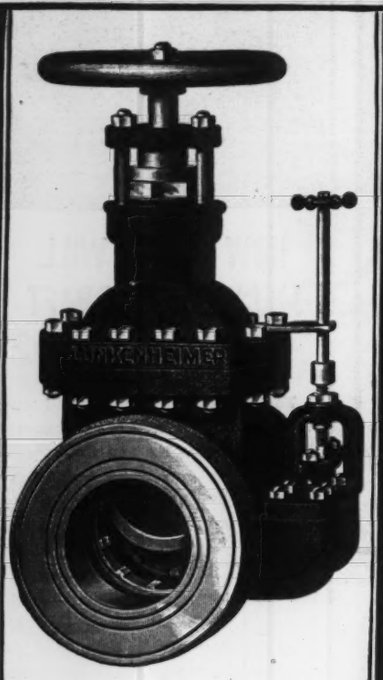

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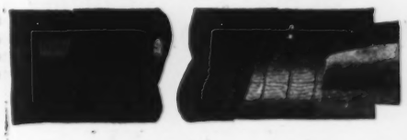
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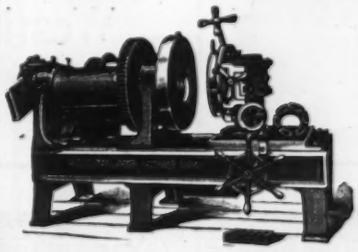
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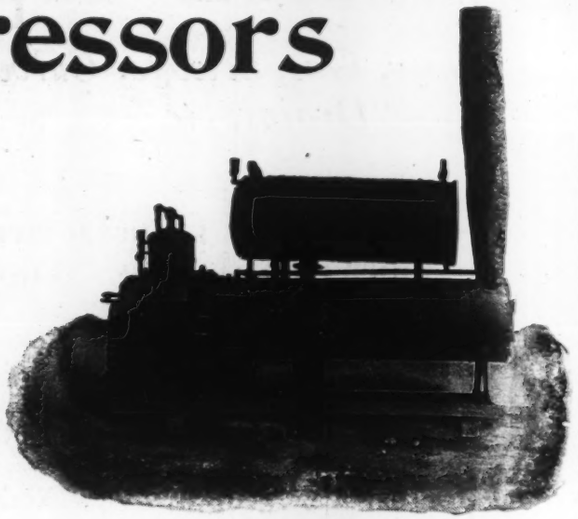

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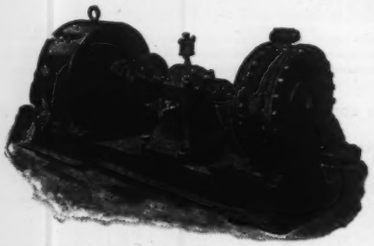

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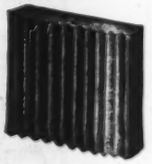

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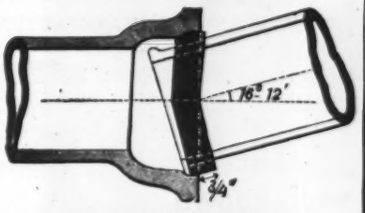

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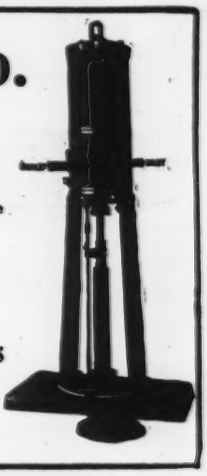

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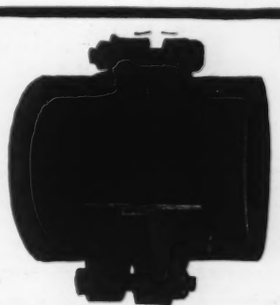

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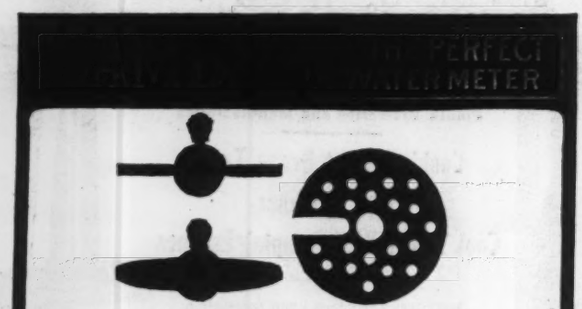

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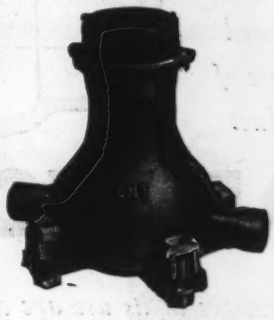

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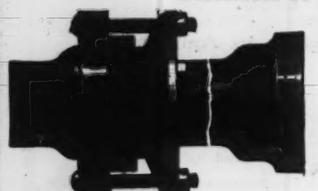

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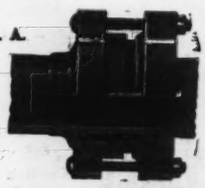

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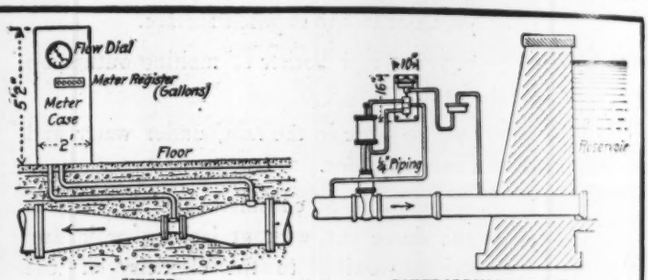

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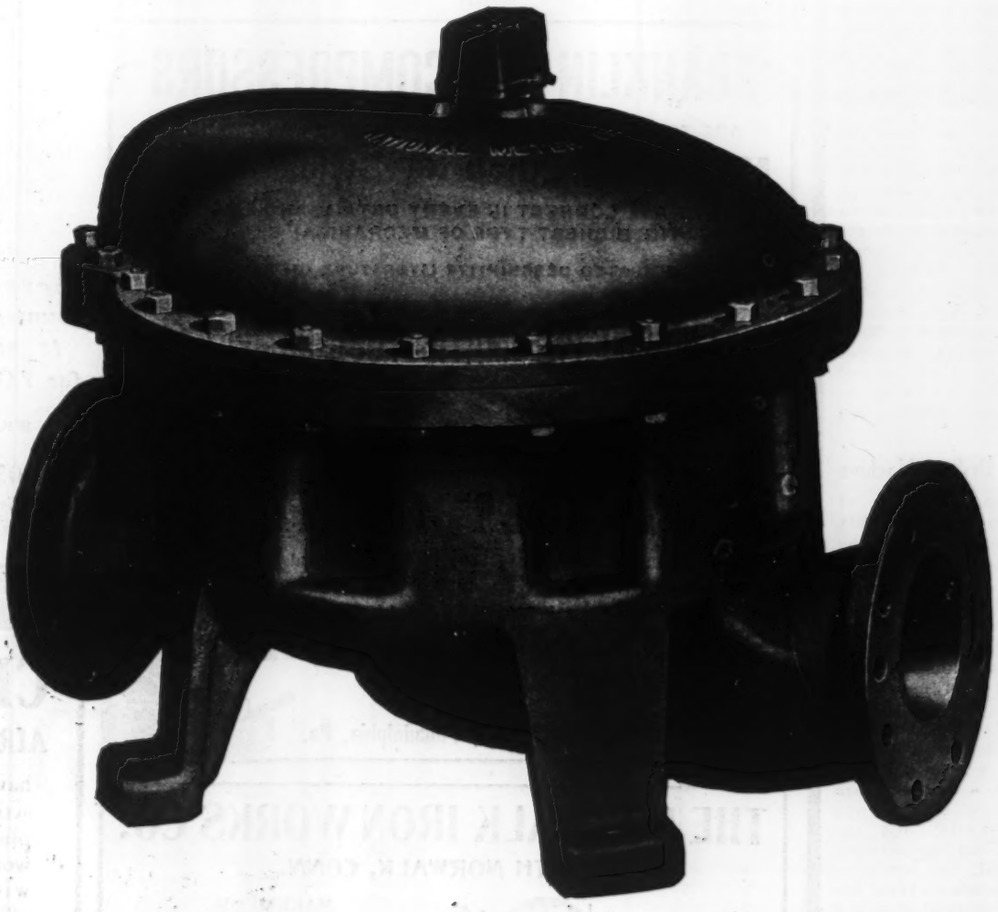

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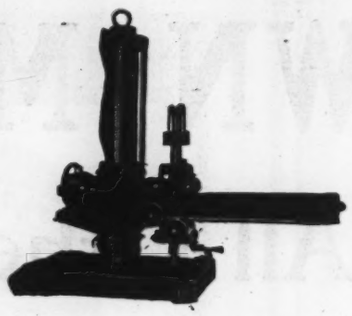

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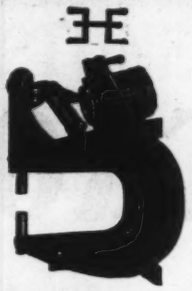

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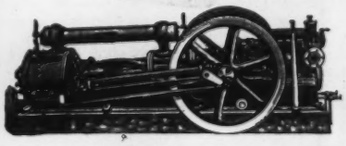

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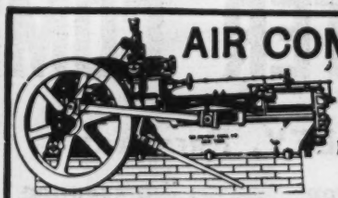

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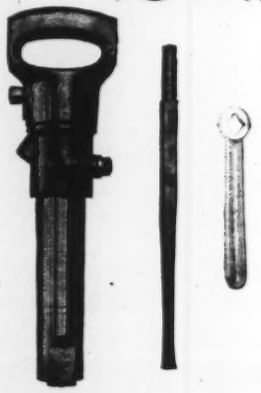

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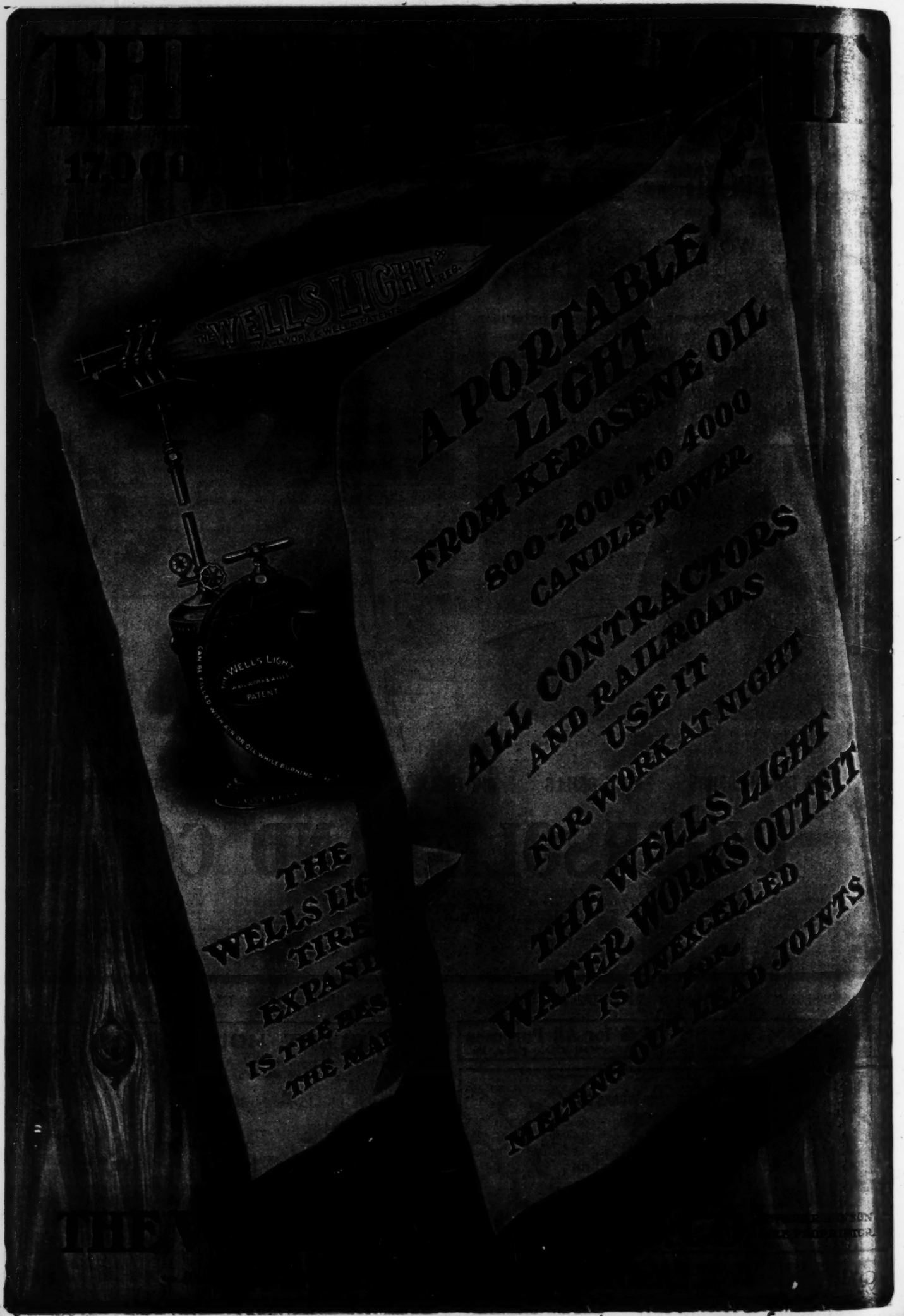
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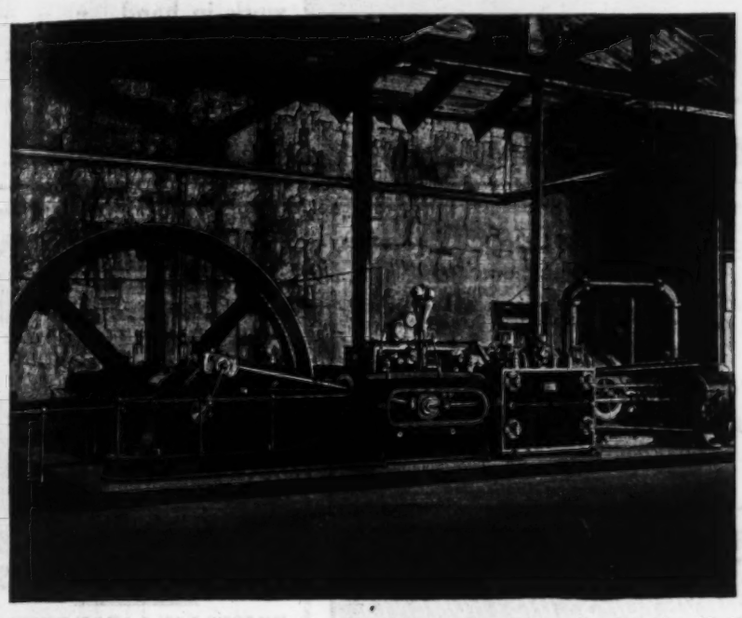

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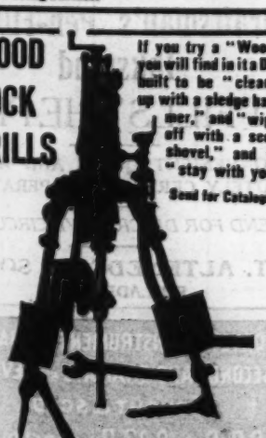

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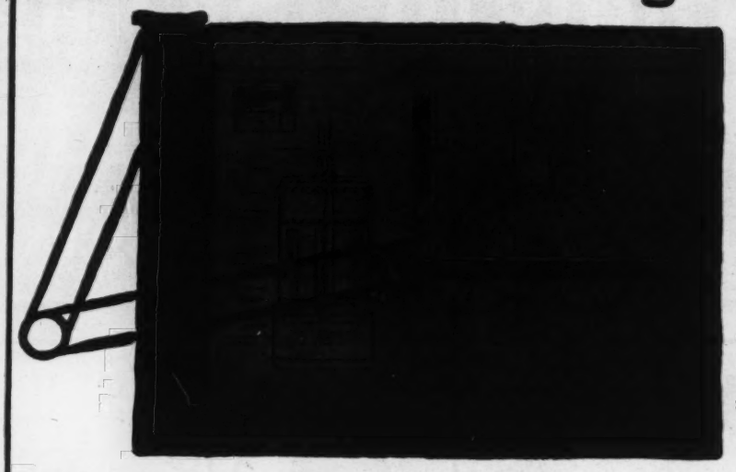

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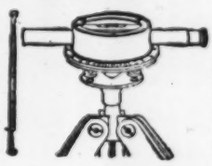

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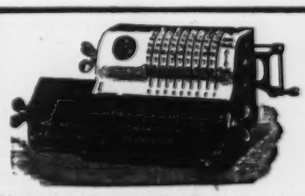

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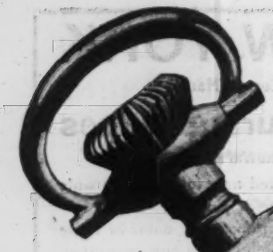

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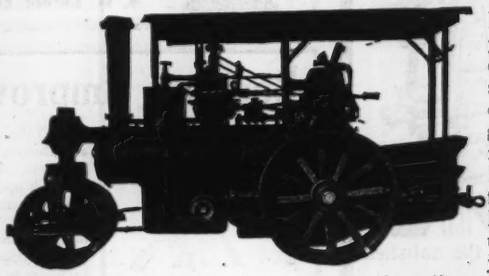

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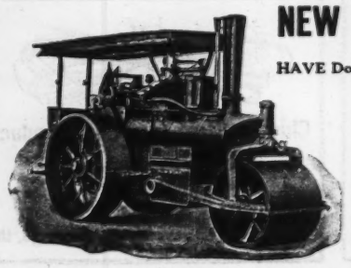

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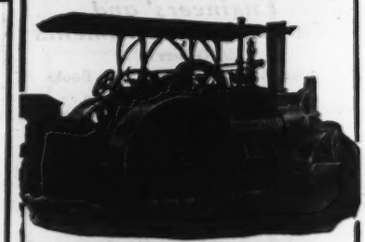

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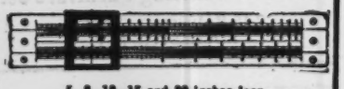

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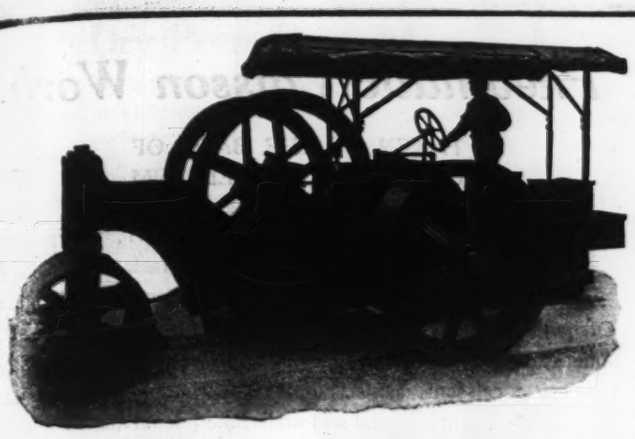

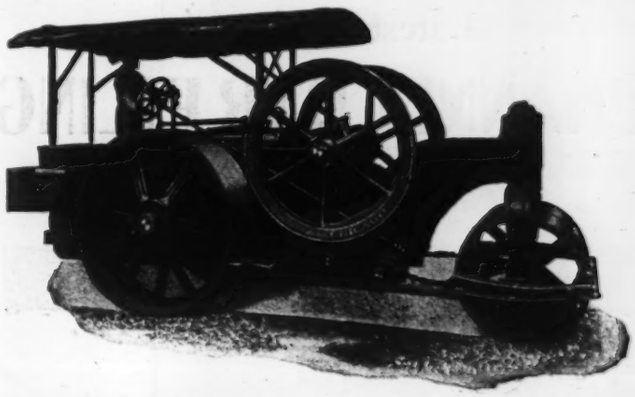

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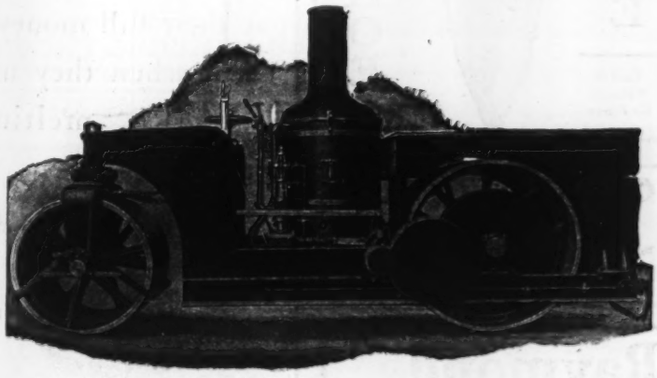

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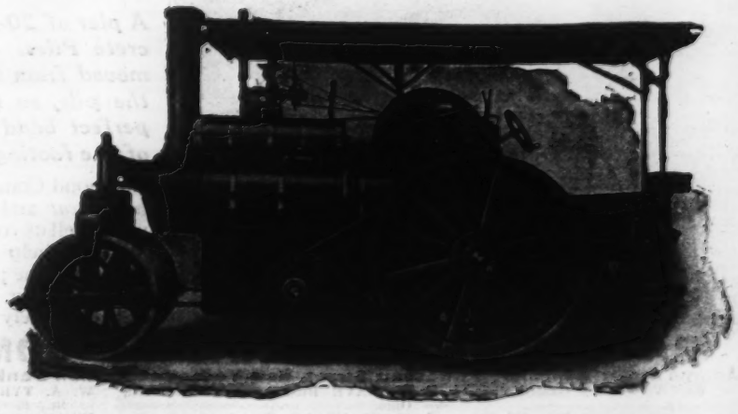

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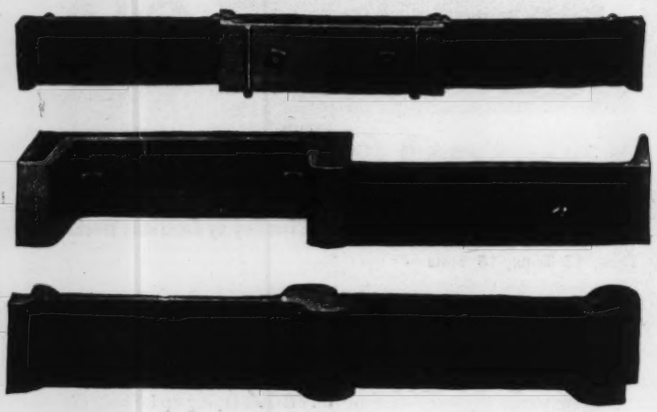

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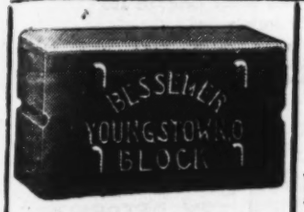

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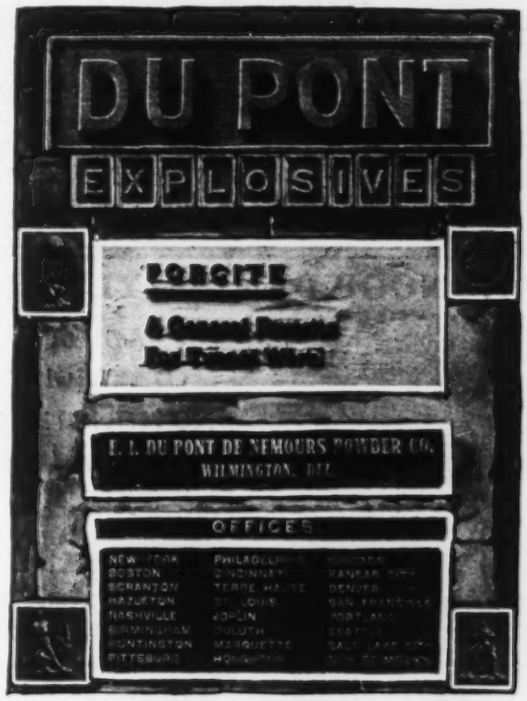

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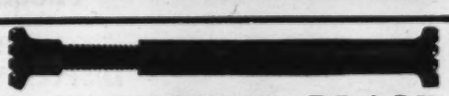

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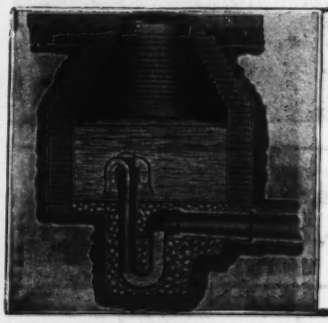

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Studebaker Bros. Co., South Bend, Ind.
Tiffin Wagon Co., Tiffin, O.
Troy Public Works Co., Utica, N. Y.
Troy Wagon Works Co., Troy, N. Y.
Watson Wagon Co., Canastota, N. Y.
Western Wheeled Scraper Co., Aurora, Ill.

Castings and Forgings—Iron—Steel
Albree Iron Works, Allegheny, Pa.
Bacon, Earle C., 26 Cortlandt St., New York.
Belmont Iron Works, Philadelphia.
Bourne-Fuller Co., Cleveland.
Broomell, Schmidt & Steacy, York, Pa.
Builders' Iron Foundry, Providence, R. I.
Caldwell, H. W., & Son Co., Chicago.
Coldwell-Wilcox Co., Newburgh, N. Y.
Cornell, J. B. & J. M., 260th St. & 11th Ave., N. Y.
Dimmick Pipe Co., Birmingham, Ala.
Dobbie Fdy. & Mach. Co., Niagara Falls, N. Y.
Donaldson Iron Co., Emaus, Lehigh Co., Pa.
Drummond, M. J., & Co., New York.
Fawcus Machine Co., Pittsburg.
Fox, John, & Co., 253 Broadway, New York.
Leffel, James, & Co., Springfield, O.
Lehigh Car, Wheel & Axle Wks., Catasauqua, Pa.
Lynchburg Foundry Co., 220 Broadway, New York.
Marine Engine & Machine Co., New York.
Millar, Charles, & Son Co., Utica, N. Y.
Pennsylvania Steel Co., Steelton, Pa.
Pennsylvania Engineering Co., New Castle, Pa.
Pittsburg Mfg. Co., 25th St., Pittsburg.
Sessions Foundry Co., Bristol, Conn.
Smith, S. Morgan, Co., York, Pa.
Struthers-Wells Co., Warren, Pa.
Union Hydraulic Works, Philadelphia.
U. S. Cast Iron Pipe & Foundry Co., New York.
Vulcan Iron Works, 47 Milwaukee Ave., Chicago.
Vulcan Iron Works Co., Toledo, O.
Warren Foundry & Machine Co., New York.
Wood, R. D., & Co., 400 Chestnut St., Phila.
Youngstown Car Mfg. Co., Youngstown, O.

Cement Block Machines
American Hydraulic Stone Co., Denver, Colo.
Fisher Hydraulic Stone & Machy. Co., Baltimore.

Cement-Making Machinery
Alexander Iron Works, Syracuse, N. Y.
Atlas Dryer Co., Cleveland, O.
Austin Mfg. Co., Chicago, Ill.
Bartlett, C. O., & Snow Co., Cleveland, O.
Bonnot Co., Canton, O.
Bradley Pulverizer Co., 92 State St., Boston.
Cresson, Geo. V., Co., 141 Liberty St., New York.
Cummer, F. D., & Son Co., Cleveland, O.
Fuller Eng. Co., Allentown, Pa.
Kent Mill Co., 170 Broadway, New York.
Lehigh Car, Wheel & Axle Wks., Catasauqua, Pa.
Link-Belt Co., Philadelphia.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulverizer Co., Chicago.
Reeves Bros. Co., Alliance, O.
Risdon Iron Works, San Francisco, Cal.
Ruggles-Coles Eng'g Co., 39 Cortlandt St., N. Y.
Smidth, F. L., & Co., 41 Cortlandt St., N. Y.
Sturtevant Mill Co., Boston, Mass.
Taylor Iron & Steel Co., Highbridge, N. J.
Webster Mfg. Co., Chicago.

Cement—Natural and Portland
Alma Cement Co., Pittsburg.
Alpha Portland Cement Co., Easton, Pa.
Alsen Portland Cement Co., 45 Broadway, N. Y.
American Cement Co., 42 So. 15th St., Phila.
Atlas Portland Cement Co., 30 Broad St., N. Y.
Chicago Portland Cement Co., Chicago.
Coplay Cement Mfg. Co., 1123 Broadway, N. Y.
Dexter Portland Cement (French, S. H.), Phila.
Edison Portland Cement Co., Philadelphia.
Empire Portland Cement Co., Warners, N. Y.
Fredenburg & Lounsbury, 282 4th Ave., N. Y.
French, Samuel H., & Co., Philadelphia, Pa.
Glens Falls Port. Cement Co., Glens Falls, N. Y.
Hartranft, Wm. G., Cement Co., Philadelphia.
Helderberg Cem't Co., 78 State St., Albany, N. Y.
Hudson Portland Cement Co., Hudson, N. Y.
Hunkins Willis Lime & Cement Co., St. Louis, Mo.
Illinois Steel Co., The Rookery, Chicago.
Kosmos Portland Cement Co., Louisville, Ky.
Lawrence Cement Co., 1 Broadway, New York.
Lehigh Portland Cement Co., Allentown, Pa.
Marquette Portland Cement Co., Chicago.
Meacham & Wright, Chicago.
Penn-Allen Portland Cement Co., Allentown, Pa.
Penna. Cement Co., 28 Cortlandt St., New York.
Snyder, Hiram, & Co., 229 Broadway, New York.
St. Louis Portland Cement Co., St. Louis, Mo.
Thorn Cement Co., Buffalo, N. Y.
Vulcanite Portland Cement Co., Philadelphia.
Warner, Chas., Co., Wilmington, Del.
Western Cement Co., Louisville, Ky.

Cement Waterproofing
Waterproofing Co., New York.
E. J. Winslow Co., Chicago.
Theo. F. Koch, Chicago, Ill.

Chain Blocks
Yale & Towne Mfg. Co., New York.

Checks—Time and Merchandise
American Railway Supply Co., 24 Park Pl., N. Y.

Chemical Laboratories (See Professional Card Page)

Chimneys—Brick and Concrete
Atlas Const. Co., St. Louis.
Custodis Chimney Const. Co., Bennett Bldg., N. Y.
Electric Welding Co., Pittsburg.
German Kiln & Con. Co., New York.
National Dry Kiln Co., Indianapolis.
Weber Steel Concrete Chimney Co., Chicago.

Chimneys—Iron and Steel (See Boilers)

Chutes—Mail
Cutler Mfg. Co., Rochester, N. Y.

Coal and Ore Handling and Conveying Machinery, Etc.
Atlas Dryer Co., Cleveland, O.
Avery Scale Co., No. Milwaukee, Wis.
Bacon, Earle C., 26 Cortlandt St., New York.
Bartlett, C. O., & Snow Co., Cleveland, O.
Beatty, M., & Sons, Welland, Ont.
Beaumont, R. H., Co., Philadelphia.
Berquist, A. S., 515 Bedford Ave., B'klyn, N. Y.
Broderick & Bascom Rope Co., St. Louis.
Browning Engineering Co., Cleveland, O.
Brown Hoisting Machinery Co., Cleveland, O.
Chain Belt Co., Milwaukee.
Dodge Cold Storage Co., Philadelphia.
Gandy Belting Co., Baltimore, Md.
Hayward Co., 97 Cedar St., New York.
Hunt, C. W., Co., Stapleton, S. I., N. Y.
Jeffrey Mfg. Co., Columbus, O.
Koppel, Arthur, 66 Broad St., New York.
Lambert Hoisting Engine Co., Newark, N. J.
Lidgerwood Mfg. Co., 56 Liberty St., New York.
Link-Belt Co., Philadelphia.
Main Belting Co., Philadelphia.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
Minn. Steel & Machinery Co., Minneapolis, Minn.
Mundy, J. S., 22 Prospect St., Newark, N. J.
National Hoisting Engine Co., Harrison, N. J.
N. J. Fdy. & Mach. Co., 9 Murray St., N. Y.
No. Penn Iron Works, Philadelphia, Pa.
Pittsburg (Pa.) Industrial Iron Works.
Pittsburg Razing & Erecting Co., Pittsburg.
Power & Mining Machinery Co., Cudahy, Wis.
Robins Conveying Belt Co., 13-21 Park Row, N. Y.
Rodger Ballast Car Co., Chicago.
Vulcan Iron Works, Wilkes-Barre, Pa.
Webster Mfg. Co., Chicago.
Wellman-Seaver-Morgan Co., Cleveland, O.
Wiener, Ernst, Co., New York.
Wonham & Magor, New York.

Cocks (See Valves and Hydrants)

Computing Machines
Keuffel & Esser Co., New York.
Reuter, Carl H., Philadelphia.

Concrete Mixers and Machinery
Austin Mfg. Co., Chicago, Ill.
Briggs Labor Saving Appliance Co., Waterloo, Ia.
Chicago Con. Machy. Co., Chicago, Ill.
Cockburn Barrow & Machine Co., New York.
Contractors' Supply & Equipment Co., New York.
Drake Standard Machine Co., Chicago.
Fisher Hydraulic Stone & Machy. Co., Baltimore.
Hains Concrete Mixer Co., Washington, D. C.
Internat'l Fence & Firep'fing Co., Columbus, O.
Interstate Engineering Co., Bedford, O.
Link-Belt Co., Philadelphia.
McKelvey Concrete Machinery Co., Chicago.
Municipal Engineering & Contracting Co., Chicago.
Ransome Concrete Machinery Co., New York.
Scholl, Julian, & Co., New York.
Wilcox, W. H., & Co., Binghamton, N. Y.

Concrete Work (See Contractors and Fireproof Construction)

Condensers
C. H. Wheeler Mfg. Co., Philadelphia, Pa.

Conduits—Creosoted Wood (See Creosoting)

Conduits—Vitrified Clay
Am. Pipe Mfg. Co., 112 N. Broad St., Phila.
Blackmer & Post Pipe Co., St. Louis.
Bond, Harold L., & Co., 140 Pearl St., Boston.
Dickey Clay Mfg. Co., Kansas City, Mo.
Evans & Howard Fire-Brick Co., St. Louis.
Gest, G. M., 277 Broadway, New York.

Contractors (See also Bridges)
Ambursen Hydraulic Const. Co., Boston.
Abbot-Gamble Co., New York and St. Louis.
American Pipe Mfg. Co., 112 N. Broad St., Phila.
Atlantic, Gulf & Pacific Co., New York.
Atlas Dryer Co., Cleveland, O.
Austin Drainage Excavator Co., F. C., Chicago.
Baltimore Ferro Concrete Co., Baltimore.
Barber Asphalt Paving Co., Philadelphia.
Bates & Rogers Constr. Co., Chicago.
Briggs, J. Marvin, 17 Battery Pl., New York.
Cook Well Co., St. Louis, Mo.
Crandall, H. I., & Son, East Boston, Mass.
Curtin-Ruggles Co., New York.
Eastern Construction Co., Brooklyn, N. Y.
Electric Welding Co., Pittsburg, Pa.
Ferguson Contr. Co., Pittsburg.
Foundation Co., 37 Nassau St., New York.
Gest, G. M., 277 Broadway, New York.
Gilbreth, Frank B., 34 W. 26th St., New York.
Gillespie, T. A., Co., Pittsburg.
Holmes, A. L., Grand Rapids, Mich.
Johson Hooker Co., New York and Pittsburg.
Lea & Kitchen, 433 Wabash Ave., Chicago.
McArthur Bros., Chicago, Ill.
McMullen, Arthur, & Co., Park Row Bldg., N. Y.
Missouri Valley Br. & Ir. Co., Leavenworth, Kan.
Morava Construction Co., Chicago.
Municipal Engineering & Contracting Co., Chicago.
National Bridge Co., Indianapolis.
Naughton Co., 299 Broadway, New York.
North American Dredging Co., San Francisco.
O'Rourke Engineering & Const. Co., New York.
Puget Sound Bridge & Dredg. Co., Seattle, Wash.
Phillips & Worthington, 136 Liberty St., N. Y.
Shoemaker, Lewis F., & Co., Philadelphia.
S. R. Smythe & Co., Pittsburg, Pa.
Snare & Triest, 39 Cortlandt St., New York.
Southwestern Bridge Co., Joplin, Mo.
Stone & Webster, Boston.
Structural Concrete Co., New York.
Troy Public Works Co., Utica, N. Y.
Tucker & Vinton, Inc., 156 Fifth Ave., New York.
Turner Construction Co., New York.
Turner-Forman Co., Philadelphia.
United Engineering & Contracting Co., New York.
White, J. G., & Co., New York.

Converters and Cooling Towers
Alberger Condenser Co., 95 Liberty St., New York.
Davidson, M. T., 43 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, Indianapolis, Ind.
Epping Carpenter Co., Pittsburg, Pa.
Graver, Wm., Tank Works, East Chicago, Ind.
Meehan Boiler & Const. Co., Lowellville, O.
Petroleum Iron Works Co., Washington, Pa.
Penna. Engineering Works, New Castle, Pa.
Pittsburg (Pa.) Ind. Iron Works.
Reeves Bros. Co., Alliance, O.
Riter-Conley Mfg. Co., Pittsburg, Pa.
Southwark Foundry & Machine Co., Philadelphia.
Southwestern Bridge Co., Joplin, Mo.
Wellman-Seaver-Morgan Co., Cleveland, O.
Wheeler, C. H., Mfg. Co., Philadelphia.

Countershafts
Buffalo Forge Co., Buffalo, N. Y.
Builders' Iron Foundry, Providence, R. I.
Cresson, Geo. V., 141 Liberty St., New York.
Deming Co., Salem, O.
Stow Flexible Shaft Co., Philadelphia.
Sturtevant, B. F., Co., Hyde Park, Mass.

Conveyors and Conveying Machinery (See Coal and Ore Handling)

Couplings—Friction Clutch
Brown Hoisting Machinery Co., Cleveland, O.
Browning Engineering Co., Cleveland, O.
Caldwell, H. W., & Son Co., Chicago.
Cresson, Geo. V., 141 Liberty St., New York.
Fairbanks, Morse & Co., Chicago.
Poole Engineering & Machine Co., Baltimore.
Smith, S. Morgan, York, Pa.

Cornices
Irwin, Thos. W., Mfg. Co., Allegheny, Pa.
E. Van Noorden Co., Boston, Mass.

Covers—Manhole, Traps, Basin, Etc.
Duplex Mfg. & Foundry Co., Cleveland.

Cranes and Hoists
American Hoist & Derrick Co., St. Paul, Minn.
Beatty, M., & Sons, Welland, Ont.
Bacon, Earle C., Havemeyer Bldg., New York
Boston Bridge Co., 47 Winter St., Boston.
Brown Hoisting Machinery Co., Cleveland, O.
Browning Engineering Co., Cleveland, O.
Byers, John F., Machine Co., Ravenna, O.
Dobbie Fdy. & Mach. Co., Niagara Falls, N. Y.
Dodge Coal Storage Co., Philadelphia.
Gen. Pneumatic Tool Co., Montour Falls, N. Y.
Hayward Co., 97 Cedar St., New York.
Hoisting Machinery Co., New York.
Industrial Works, Bay City, Mich.
Ingersoll-Rand Co., New York.
Interstate Engineering Co., Bedford, O.
Lambert Hoisting Engine Co., Newark, N. J.
Link-Belt Co., Philadelphia.
Marion Steam Shovel Co., Marion, O.
McMyler Mfg. Co., Cleveland, O.
N. J. Foundry & Machine Co., New York.
No. Penn Iron Works, Philadelphia, Pa.
Pawling & Harnischfeger, Milwaukee, Wis.
Pittsburg (Pa.) Ind. Iron Works.
Robins Conveying Belt Co., New York.
Sprague Electric Co., 531 W. 34th St., New York.
Torbert, A. C., Co., Chicago.
Terry & Tench, New York.
Wellman-Seaver-Morgan Co., Cleveland, O.
Williamson Bros. Co., Philadelphia.

Crayons and Pencils (See Engineers' Supplies)

Creosoting
Am. Creosoting Co., 29 Broadway, New York.
American Creosote Works, New Orleans, La.
Atlantic Creo. & Wood Pres'v'g Wks., Norfolk, Va.
Barber Asphalt Paving Co., Philadelphia.
C. A. Mfg. Co., Austin, Tex.
Carbolineum Wood Preserving Co., New York.
Eppinger & Russell Co., 66 Broad St., New York.
Excelsior Wooden Pipe Co., San Francisco.
Gulfport Creosoting Co., Gulfport, La.
Intern't'l Creo. & Const. Co., Galveston, Tex.
Michigan Pipe Co., Bay City, Mich.
National Wood Pipe Co., Los Angeles, Cal.
New Orleans (La.) Wood Preserving Works.
Norfolk Creosoting Co., Norfolk, Va.
San Francisco (Cal.) Timber Preserving Co.
Southern Creosoting Co., Slidell, La.
U. S. Wood Preserving Co., New York.
West Pascagoula (Miss.) Creosoting Works.
Wyckoff Pipe & Creosoting Co., Stamford, Conn.

Crossings—Railway (See Frogs)

Crushers and Pulverizers
Bacon, Earle C., 26 Cortlandt St., New York.
Bartlett, C. O., & Snow Co., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
Lehigh Car Wheel & Axle Wks., Catasauqua, Pa.
Link-Belt Co., Philadelphia.
Pittsburg Industrial Iron Wks., Pittsburg, Pa.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulverizer Co., Chicago.
Robins Conveying Belt Co., 13-21 Park Row, N. Y.
Sturtevant Mill Co., Boston, Mass.
Taylor Iron & Steel Co., Highbridge, N. J.
Vulcan Iron Works, Wilkes-Barre, Pa.

Cupolas—Foundry
Meehan Boiler & Const. Co., Lowellville, O.
Petroleum Iron Works, Washington, Pa.
Reeves Bros. Co., Alliance, O.
Stuebner Iron Works, Long Island City, N. Y.

Curb Boxes and Molds
Bourbon Copper & Brass Works, Cincinnati, O.
Builders' Iron Foundry, Providence, R. I.
Darling Pump & Mfg. Co., Williamsport, Pa.
Duplex Mfg. & Fdy. Co., Cleveland, O.
Steel Protected Concrete Co., Philadelphia, Pa.

Dams—Concrete Steel and Cofferdam
Ambursen Hydraulic Construction Co., Boston.
Carnegie Steel Co., Pittsburg, Pa.
Foundation Co., New York.
U. S. Steel Piling Co., Chicago, Ill.

Derricks and Derrick Fittings and Hoisting Machinery (See also Coal and Ore Handling)
American Hoist & Derrick Co., St. Paul, Minn.
Baltimore Bridge Co., Baltimore.
Beatty, M., & Sons, Welland, Ont.
Broderick & Bascom Rope Co., St. Louis.
Browning Engineering Co., Cleveland, O.
Byers, John F., Machine Co., Ravenna, O.
Carlin's, Thomas, Sons Co., Allegheny, Pa.
Carson Trench Machine Co., Boston, Mass.
Contractors' Plant Mfg. Co., Buffalo, N. Y.
Contractors' Supply & Equipment Co., Chicago.
Dobbie Fdy. & Mach. Co., Niagara Falls, N. Y.
Flory, S., Mfg. Co., Bangor, Pa.
Hayward Co., The, 97 Cedar St., New York.
Lambert Hoisting Engine Co., Newark, N. J.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Mundy, J. S., 22 Prospect St., Newark, N. J.
National Hoisting Engine Co., Harrison, N. J.
N. J. Fdy. & Mach. Co., 9 Murray St., N. Y.
Pawling & Harnischfeger, Milwaukee, Wis.
Pittsburg Industrial Iron Works, Pittsburg, Pa.
Terry & Tench, New York.

Detective Agencies
Muncey Det. Agency, Chicago, Ill.

Ditching Machinery, Steam Shovels, Etc.
American Hoist & Derrick Co., St. Paul, Minn.
Atlantic Equipment Co., New York.
Atlantic, Gulf & Pacific Co., New York.
Austin Mfg. Co., Chicago.
Beatty, M., & Sons Co., Welland, Ont.
Bond, Harold L., & Co., 240 Pearl St., Boston.
Briggs, J. Marvin, 17 Battery Pl., New York.
Brown Hoisting Machinery Co., Cleveland, O.
Browning Engineering Co., Cleveland, O.
Buckeye Traction Ditcher, Findlay, O.
Bucyrus Co., South Milwaukee, Wis.
Carson Trench Machine Co., Boston.
Dunn Mfg. Co., Pittsburg, Pa.
Ellicott Machine Co., Baltimore, Md.
Fitz-Hugh, Luther, Co., Chicago.
Flory, S., Mfg. Co., Bangor, Pa.
Hayward Co., 97 Cedar St., New York.
Ingersoll-Rand Co., New York.
Kalamazoo (Mich.) Fdy. & Machine Co.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Males, The, Co., New York.
Marion Steam Shovel Co., Marion, O.
McMyler Mfg. Co., Cleveland.
Millar, Charles, & Son Co., Utica, N. Y.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Municipal Engineering & Contracting Co., Chicago.
North American Dredging Co., San Francisco.
Pittsburg (Pa.) Ind. Iron Works.
Risdon Iron Works, San Francisco, Cal.
Souther, John, & Co., 185 Summer St., Boston.
Toledo Foundry & Machine Co., Toledo, O.
Torbert, A. C., & Co., Chicago.
Troy Public Works Co., 1154 St. Nicholas Ave., New York.
Vulcan Iron Works, Chicago.
Vulcan Iron Works, Toledo, O.
Watson, Benj., New York.
Western Wheeled Scraper Co., Aurora, Ill.

Diving Apparatus
Morse, A. J., & Son, 221 High St., Boston.
Shrader's, A., Son, 32 Rose St., New York.

Doors and Shutters
Kinnear Mfg. Co., Columbus, O.
Wilson, J. G., Mfg. Co., New York.

Dredges (See Ditching Machinery)

Dredging Contractors (See Contractors)

Drills—Rock and Ore
American Air Compressor Works, New York.
Austin Mfg. Co., Chicago.
Beatty, M., & Sons, Welland, Ont.
Chicago Pneumatic Tool Co., Chicago, Ill.
Cyclone Drill Co., Orrville, O.
Dallett, Thos. H., Co., Philadelphia.
Dobbie Fdy. & Mach. Co., Niagara Falls, N. Y.
Ingersoll-Rand Co., New York.
Jeffrey Mfg. Co., Columbus, O.
Keystone Driller Co., Box H, Beaver Falls, Pa.
Marvin Electric Drill Co., Binghamton, N. Y.
McKiernan Drill Co., 170 Broadway, New York.
Star Drilling Machine Co., Akron, O.
Stow Flexible Shaft Co., Philadelphia.
Sullivan Machinery Co., Chicago.
Stow Mfg. Co., Binghamton, N. Y.
Wickes Bros., Jersey City, N. J.
Wood Drill Works, Paterson, N. J.

Dryers and Drying Apparatus
Am. Blower Co., Detroit, Mich.
American Process Co., 62 William St., N. Y.
Atlas Dryer Co., Cleveland, O.
Bartlett, C. O., & Snow Co., Cleveland, O.
Cummer, F. D., & Son Co., Cleveland, O.
Fuller Eng. Co., Allentown, N. J.
Jeffrey Mfg. Co., Columbus, O.
Kent Mill Co., 170 Broadway, N. Y.
Ruggles-Coles Engineering Co., New York.
Sturtevant, B. F., Co., Hyde Park, Mass.
U. S. Drying Engineering Co., New York.
Smidth, F. L., & Co., 41 Cortlandt St., N. Y.

Dumping Beds
Black Mfg. Co., Chicago, Ill.

Dynamite, Explosives, Exploders
Bond, Harold L., & Co., 240 Pearl St., Boston.
Contractors' Supply & Equipment Co., Chicago.
Keystone Powder Mfg. Co., Emporium, Pa.
Nat'l Powder Co., 5th Ave. & 34th St., N. Y. C.
Sinnamahoning Powder Mfg. Co., Emporium, Pa.

Economizers (See Ventilating Apparatus)

Electrical Machinery, Dynamos, Etc.
C. & C. Electric Co., New York.
Crocker-Wheeler Co., Ampere, N. J.
Dallett, Thos. H., & Co., Philadelphia.
Ft. Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Sprague Electric Co., New York.
Stow Flexible Shaft Co., Philadelphia.
Sturtevant, B. F., Co., Hyde Park, Mass.
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.

Elevators—Coal, Rock and Ore (See Coal and Ore Handling)

Elevators—Freight and Passengers
Fairbanks, Morse & Co., Chicago.
Marine Engine & Machine Co., New York.

Elevators—Grain Storage
Baltimore Bridge Co., Baltimore.
Bartlett, C. O., & Snow Co., Cleveland, O.
Berquist, A. S., Brooklyn, N. Y.
Caldwell, H. W., & Son Co., Chicago.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Philadelphia.
Main Belting Co., Philadelphia.
Petroleum Iron Works, Washington, Pa.
Reeves Brothers Co., Alliance, O.
Steel Storage & Elev. Const. Co., Buffalo, N. Y.
Webster Mfg. Co., Chicago.

Employment Bureaus
American School of Correspondence, Chicago.
Cleveland Engineering Agency, Cleveland, O.
Engineering Agency, Chicago, Ill.
Hapgood's Bureau, 309 Broadway, New York.
International Correspondence Schools, Scranton, Pa.
Julian Bros., 110 Mott St., New York.
Labor Inf. Office for Italians, New York.
New York Engineering Agency, New York.

Engineers—Civil, Consulting and Mechanical (See Professional Card Pages)

Engineers' Supplies, Instruments, Clocks, Etc.
Ainsworth, Wm., & Sons, Denver, Colo.
Alexander, Clinton B., Clearfield, Pa.
Alteneder, T., & Sons, Philadelphia.
Amer. Drafting Furniture Co., Rochester, N. Y.
Architects' & Eng'rs' Sup. Co., Kansas City, Mo.
Berger, C. L. & Sons, Boston.
Boettner Chapman Co., 26 Church St., New York.
Bostrom & Brady, Atlanta, Ga.
Brandis, F. E., Sons & Co., Brooklyn, N. Y.
Buff & Buff Mfg. Co., Boston.
Cardinell-Vincent Co., Oakland, Cal.
Chicago Blue Print Paper Co., Chicago.
Chicago Steel Tape Co., Chicago.
Dietzgen, Eugene, Co., 181 Monroe St., Chicago.
Electro Sun Blue Print Co., New York.
Elliott, B. K., Co., Pittsburg, Pa.
Gurley, W. & L. E., Troy, N. Y.
Hart, Chas., 36 Vesey St., New York.
Heller & Brightly, Philadelphia.
E. Howard Watch Co., Waltham, Mass.
Kelly, John E., Seattle, Wash.
Keuffel & Esser Co., 127 Fulton St., New York.
Kolesch & Co., 138 Fulton St., New York.
Ledder & Probst, 287 Washington St., Boston.
Lufkin Rule Co., Saginaw, Mich.
Mittineague Paper Co., Mittineague, Mass.
Niagara Tachometer & Instrument Co., Niagara Falls.
Pfister, Herm., 428 Plum St., Cincinnati, O.
Pitts. Instrument & Mach. Co., Pittsburg, Pa.
Prince, L. M., Cincinnati, O.
Queen & Co., 1010 Chestnut St., Philadelphia.
Ruehle, E. G., & Sons, 108 Fulton St., New York.
Soltman, E. G., New York.
Stackpole & Bro., 39 Fulton St., New York.
Stieren Co., W. B., Pittsburg, Pa.
St. George, H. V., New York.
Surveyors' Instrument Exchange, Philadelphia.
Ulmer, J. C., & Co., Cleveland, O.
Universal Drafting Machine Co., Cleveland, O.
Weber, F., & Co., Philadelphia.
Williams, Brown & Earle, Philadelphia.
Wittstock, P. & R., Berlin, Germany.
Young & Sons, Philadelphia.

Engines—Gas, Gasoline and Oil
Abenaque Machine Works, Westminster Sta., Vt.
Atlas Engine Works, Indianapolis.
Backus Water Motor Co., Newark, N. J.
Cyclone Drill Co., Orrville, O.
Fairbanks, Morse & Co., Chicago.
Marine Engine & Machine Co., New York.
Mietz, A., 128-138 Mott St., New York.
National Meter Co., 84 Chambers St., New York.
New Era Iron Works, 37 Dale Ave., Dayton, O.
Otto Gas Engine Work, Philadelphia.
Power & Mining Machinery Co., Cudahy, Wis.
Thompson & Sons Mfg. Co., Beloit, Wis.

Engines—Hoisting
American Hoist & Derrick Co., St. [illegible] Minn.
Bacon, Earle C., 26 Cortlandt St., N. [illegible]
Beatty, M., & Sons, Welland, Ont.
Brown Hoisting Machinery Co., Cleve[illegible]
Byers, John F., Machine Co., Rave[illegible]
Carlin's, Thomas, Sons Co., Allegher[illegible]
Channon, H., Co., Chicago, Ill.
Contractors' Plant Mfg. Co., Buffalo[illegible]
Dake Eng. Co., Grand Haven, Mich.
Dobbie Fdy. & Mach. Co., Niagara [illegible] N. Y.
Flory, S., Mfg. Co., Bangor, Pa.
Hoisting Machinery Co., New York.
Hunt, C. W., Co., West New Bright[illegible]
Lambert Hoisting Engine Co., Newar[illegible] Y
Lidgerwood Mfg. Co., 96 Liberty St[illegible] York.
Mead-Morrison Mfg. Co., 11 Broadway[illegible] York
Minn. Steel & Machin'y Co., Minne[illegible] Minn.
Mundy, J. S., 22 Prospect St., Newar[illegible] J.
National Hoist Eng. Co., Harrison, N[illegible]
Pittsburg (Pa.) Ind. Iron Works.
Stroudsburg Engineering Co., Strou[illegible] Pa.
Vulcan Iron Works Co., Toledo, O
Vulcan Iron Works, Wilkes-Barre, P[illegible]
Watson, Benj., New York.
Wellman-Seaver-Morgan Co., Cleveland

Engines—Stationary and Pu[illegible]
Am. Blower Co., Detroit, Mich.
Atlas Engine Works, Indianapolis.
Austin Mfg. Co., Chicago.
Bartlett, A. F., & Co., Saginaw, M[illegible]
Bond, Harold L., & Co., 240 Pearl St[illegible]
Builders' Iron Foundry, Providence[illegible]
Buffalo Forge Co., Buffalo, N. Y.
Cameron, A. S., Steam Pump Works, [illegible] York.
Cook Well Co., St. Louis.
Davidson, M. T., 43 Keap St., Brook[illegible] N. Y.
Dayton Hydraulic Machine Co., Day[illegible]
De Laval Steam Turbine Co., Trento[illegible] N. J.
Dean Bros.' Steam Pump Wks., Indian[illegible] Ind.
Downie Pump Co., Downieville, Pa.
Edwards, Joseph, & Co., 414 Water St[illegible] N. Y.
Emerson Steam Pump Co., Washington[illegible] D. C.
Epping-Carpenter Co., Pittsburg, Pa.
Erie Pump & Engine Co., Erie, Pa.
Fairbanks, Morse & Co., Chicago.
Granger, A. D., Co., New York.
Hill Machine Co., Anderson, Ind.
Ide, A. L., & Sons, Springfield, Ill.
International Steam Pump Co., New [illegible]
Jeanesville Iron Wks. Co., Hazleton, P[illegible]
Lawrence Pump & Engine Co., Lawrence, Mass.
Leffel, James, & Co., Springfield, O.
Marine Engine & Machine Co., New York.
McGowan, John H., Co., Cincinnati, O.
Millar, Charles, & Son Co., Utica, N. Y.
Platt Iron Works Co., Dayton, O.
Pittsburg Industrial Iron Works, Pittsburg.
Power & Mining Machinery Co., Cudahy, Wis.
Pulsometer Steam Pump Co., New York.
Prescott, F. M., Steam Pump Co., Milwaukee.
Reliance Machine & Tool Wks., St. Louis.
Risdon Iron Works, San Francisco.
Southwark Foundry & Mach. Co., Philadelphia.
Stroudsburg Engine Wks., Stroudsburg, Pa.
Struthers, Wells & Co., Warren, Pa.
Troy Public Works Co., Utica, N. Y.
U. S. Wind Engine & Pump Co., Batavia, Ill.
Van Wie Pump Co., Syracuse, N. Y.
Watertown Engine Co., Watertown, N. Y.

Engines—Traction
Avery Mfg. Co., Peoria, Ill.

Exhaust Heads
American Spiral Pipe Works, Chicago.
Buffalo Forge Co., Buffalo, N. Y.
Durt Mfg. Co., Akron, O.
McGowan, John H., Co., Cincinnati, O.
Sturtevant, B. F., Co., Hyde Park, Mass.

Expanded Metal (See Fireproof Construction)

Excavating Machinery (See Ditching Machinery)

Fans—Exhaust (See Ventilating)

Fence—Railroad
Pittsburg Steel Co., Pittsburg, Pa.

Fence Gates, Etc. (See Railings)

Feed-water Heaters and Purifiers
Alberger Condenser Co., New York.
Blake, Geo. F., Mfg. Co., New York.
Green Fuel Economizer Co., Matteawan, N. Y.
Harrison Safety Boiler Works, Philadelphia.
Keeler, E., Co., Williamsport, Pa.
Marion Incline Filter & Heater Co., Marion, O.
Petroleum Iron Works Co., Washington, Pa.
Platt Iron Works, Dayton, O.
Reeves Bros. Co., Alliance, O.
Scaife, Wm. B., & Sons Co., Pittsburg, Pa.
Wheeler, C. H., Mfg. Co., Philadelphia.

Filters—Grease and Oil
Burt Mfg. Co. Akron, O.
Harrison Safety Boiler Works, Philadelphia.
N. Y. Continental Jewell Filtration Co., N. Y.

Filters—Water (See Water Softening Plant)

Fire Department Supplies
Bourbon Copper & Brass Works, Cincinnati, O.
Morse, A. J., & Son, 140 Congress St., Boston.

Fireproof Construction—Steel
Abbott-Gamble Co., St. Louis.
Ambursen Hydraulic Construction Co., Boston.
American Con. Steel Co., Detroit, Mich.
American System of Steel Building, Chicago.
Associated Expanded Metal Cos., New York.
Bell Engineering & Const. Co., New York.
Berger Mfg. Co., Canton, O.
Blome, R. S., Co., Chicago, Ill.
Buffalo Steel Co., Tonawanda, N. Y.
Clinton Wire Cloth Co., Clinton, Mass.
Concrete-Steel Engineering Co., New York.
Curtin-Ruggles Co., New York.
Electric Welding Co., Pittsburg, Pa.
Expanded Metal & Corrugated Bar Co., St. Louis.
General Fireproofing Co., Youngstown, O.
Gilbreth, F. B., 34 West 26th St., New York.
Hennebique Construction Co., New York.
Hudson Struc. Steel Co., Bird, & 138th St., N. Y.
Inland Steel Co., Chicago, Ill.
Internat'l Fence & Fireproofing Co., Columbus, O.
Maurer, Henry, & Son, New York.
Monolith Steel Co., Inc., Washington, D. C.
National Bridge Co., Indianapolis.
National Fireproofing Co., Chicago.
New England Structural Co., Boston, Mass.
Ransome Concrete Machinery Co., New York.
Roebling Construction Co., New York.
Rodgers Co., Chicago, Ill.
Rogers-Shear Co., Warren, Pa.
Simpson Bros. Corp., 166 Devonshire St., Boston.
Structural Concrete Co., New York.
St. Louis (Mo.) Expanded Metal Fireproofing Co.
Tucker & Vinton, Inc., 156 Fifth Ave., New York.
Turner Construction Co., 11 Broadway, New York.
Turner-Forman Co., Philadelphia.
Weber Steel Concrete Chimney Co., Chicago.

Fireproofing Materials
Barrett Mfg. Co., 17 Battery Place, New York.
Berger Mfg. Co., Canton, O.
Buffalo Steel Co., Tonawanda, N. Y.

Electric Welding Mfg. Co., Pittsburg.
Evans ... Howard Fire Brick Co., St. Louis.
General ... Fireproofing Co., Youngstown, O.
Harbison-Walker Refractories Co., Pittsburg, Pa.
Inland Steel Co., Chicago, Ill.
International Fence & Fireproofing Co., Columbus, O.
Laclede Fire-Brick Mfg. Co., St. Louis.
Maurer, Hagry, & Son, New York.
Mississippi Wire Glass Co., 377 Broadway, N. Y.
Monolith Steel Co., Inc., Washington, D. C.
National Fireproofing Co., Chicago.
New England Steam Brick Co., Providence, R. I.
Roebling Construction Co., Fuller Bldg., N. Y.
Turner & Hoffman Co., Philadelphia.

Fire Extinguishers—Automatic
Caldera, W. E., & Co., Louisville, Ky.
Morse, S. J., & Son, 140 Congress St., Boston.

Flush Tanks
Pacific Flush Tank Co., Chicago.

Fly Wheels
Builders' Iron Foundry, Providence, R. I.
Coldwell-Wilcox Co., Newburgh, N. Y.
Cresson, Geo. V., Co., 141 Liberty St., New York.
Poole Engineering & Mach. Co., Baltimore, Md.
Vulcan Iron Works, 47 Milwaukee Ave., Chicago.

Forges—Blacksmiths' and Portable
Buffalo Forge Co., Buffalo, N. Y.
Sturtevant, B. F., Co., Hyde Park, Mass.

Forgings and Founders and Machinists (See Castings)

Foundry Equipments and Supplies
Browning Engineering Co., Cleveland, O.
Link Belt Co., Philadelphia.
Meehan Boiler & Const. Co., Lowellville, O.
N. ... Foundry & Machine Co., New York.
Penna. Engineering Works, New Castle, Pa.
Petroleum Iron Works, Washington, Pa.
Poole Engineering & Machine Co., Baltimore.
Reeves Bros. Co., Alliance, O., and Syracuse, N. Y.
Riter-Conley Mfg. Co., Pittsburg, Pa.
Stuebner, G. L., Iron Works, New York.
Sturtevant, B. F., Co., Hyde Park, Mass.
Vulcan Iron Works, Wilkes-Barre, Pa.
Wiener, Ernst, Co., New York.

Frogs and Switches—Railway
Buda Foundry & Mfg. Co., Chicago.
Fairbanks, Morse & Co., Chicago.
Hyde Bros. & Co., Pittsburg.
Koppel, Arthur, 66 Broad St., New York.
Motley, Green & Co., 66 Broad St., New York.
Pennsylvania Steel Co., Philadelphia.
Rail Joint Co., 29 W. 34th St., New York.
Ramapo Iron Works, Hillburn, N. Y.
Wiener, Ernst, Co., 66 Broad St., New York.
Wonham-Magor Eng'ring Co., 27 Broadway, N. Y.

Fuel Economizers
Bartlett, C. O., & Snow Co., Cleveland, O.
Green Fuel Economizer Co., Matteawan, N. Y.
Harrison Safety Boiler Works, Philadelphia.
Sturtevant, B. F., Co., Hyde Park, Mass.

Furnaces—Garbage and Refuse
American Process Co., 62 William St., New York.
Lewis & Kitchen, Chicago.

Furnaces—Gas, Lead Melting and Smelting
American Gas Furnace Co., 23 John St., N. Y.
Risdon Iron Works, 279 Stewart St., San Francisco.
Sharon Boiler Works, Sharon, Pa.
Stuebner, G. L., Iron Works, L. I. City, N. Y.
Wellman-Seaver-Morgan Co., Cleveland, O.

Furniture and Office Fittings
American Drafting Furniture Co., Rochester, N. Y.
Berger Mfg. Co., Canton, O.
Economy Drawing Table Co., Toledo, O.
General Fire-Proofing Co., Youngstown, O.
Keuffel & Esser Co., New York.

Garbage Disposal (See Furnaces, Garbage and Sewage Disposal)

Gas Machinery, Fittings and Fixtures, Compressors, Etc.
American Gas Furnace Co., 23 John St., New York.
Backus Water Motor Co., Newark, N. J.
Marine Engine & Machine Co., New York.
McNeil, James, & Bros. Co., Pittsburg, Pa.
Norwalk Iron Works, South Norwalk, Conn.
Power & Mining Machinery Co., Cudahy, Wis.
Sharon Boiler Works, Sharon, Pa.
Wellman-Seaver-Morgan Co., Cleveland, O.

Gaskets—Bronze and Copper
American Spiral Pipe Works, Chicago.
Detroit Leather Specialty Co., Detroit, Mich.
Johns-Manville Co., H. W., New York.
U. S. Mineral Wool Co., New York.

Gates—Sluice (See Valves)

Gages (See Steam Specialties)

Gearing
Caldwell, H. W., & Son Co., Chicago.
Coldwell-Wilcox Co., Newburgh, N. Y.
Cresson, Geo. V., Co., 141 Liberty St., New York.
Fawcus Machine Co., Pittsburg.
Jeffrey Mfg. Co., Columbus, O.
Poole Engineering & Machine Co., Baltimore.
Rockwood Mfg. Co., Indianapolis, Ind.
Taylor Iron & Steel Co., Highbridge, N. J.
Vulcan Iron Works, 47 Milwaukee Ave., Chicago.

Gloves
Luther, J. P., Glove Co., Berlin, Wis.

Governors—Steam Engine
Buffalo Forge Co., Buffalo, N. Y.
Clow, J. B., & Sons, Chicago.
Lombard Governor Co., Ashland, Mass.
Longenecker, Chas., & Co., New York.
Replogle Governor Works, Akron, O.

Governors—Water-Wheel
Leffel, James, & Co., Springfield, O.
Lombard Governor Co., 24 Whittier St., Boston.
Pelton Water Wheel Co., San Francisco.
Replogle Governor Works, Akron, O.
Risdon-Alcott Turbine Co., Mount Holly, N. J.

Graders and Scrapers—Earth (See Road Machinery)

Graphite and Belt Dressing
Detroit Graphite Mfg. Co., Detroit, Mich.
Dixon, Joseph, Crucible Co., Jersey City, N. J.
Goheen Mfg. Co., Canton, O.
Internat'l Acheson Graphite Co., Niagara Falls.
National Paint Works, New York.

Grinding and Mixing Machinery (See Crushers and also Mixers)

Hangers—Joist
Berger Mfg. Co., Canton, O.
Caldwell, H. W., & Son Co., Chicago.
Poole Engineering & Machine Co., Baltimore.

Heating (See Ventilating)

Heaters, Electric
Johns-Manville Co., H. W., New York.

Hoisting and Conveying Machinery (See Coal and Ore Handling and Derricks)

Hoists (See Cranes)

Hose and Fittings
Buffalo Forge Co., Buffalo, N. Y.
Edson Mfg. Co., Boston, Mass.
Ingersoll Rand Co., New York.
Sprague Electric Co., New York
Sullivan Machinery Co., Chicago.

Hydrants and Street Washers (See Valves)

Hydraulic Rams
Cameron, A. S., Steam Pump Works, New York.
Watson-Stillman Co., 25 Dey St., New York.
Coulds Mfg. Co., Seneca Falls, N. Y.
Pelton Water Wheel Co., San Francisco.
Rife Hyd. Ram Co., New York.

Ice and Refrigerating Machinery
Featherstone Foundry & Machine Co., Chicago.
Marine Engine & Machine Co., New York.
Morris Machine Works, Baldwinsville, N. Y.

Injectors and Inspirators
Clow, James B., & Sons, Caicago.
Fairbanks, Morse & Co., Chicago.
Lunkenheimer Co., Cincinnati, O.

Inspection of Building Materials (See Professional Card Pages)

Instruments—Engineering, Surveying and Mathematical (See Engineers' Supplies)

Jacks—Hydraulic and Screw
Boston & Lockport Block Co., Boston.
Buda Foundry & Mfg. Co., Chicago.
Cleveland City Forge & Iron Co., Cleveland, O.
Dunn Mfg. Co., Pittsburg, Pa.
Fairbanks, Morse & Co., Chicago.
Joyce-Cridland Co., Dayton, O.
Kalamazoo (Mich.) Ry. Supply Co.
Watson-Stillman Co., 46 Dey St., New York.

Joints—Expansion
Coffin Valve Co., Boston.

Kilns—Cement (See also Dryers)
Atlas Dryer Co., Cleveland, O.
Bartlett, C. O., & Snow Co., Cleveland, O.
Bonnot Co., Canton, O.
Cresson, Geo. V., Co., 141 Liberty St., New York.
Cummer, F. D., & Son Co., Cleveland, O.
Fuller Eng. Co., Allentown, Pa.
Reeves Bros. Co., Alliance, O.
Smidth, F. L., & Co., New York.
U. S. Drying Engineering Co., New York.
Vulcan Iron Works, Wilkes-Barre, Pa.
Wellman-Seaver-Morgan Co., Cleveland, O.

Ladles—Foundry
Meehan Boiler & Construction Co., Lowellville, O.
Poole Engineering & Machine Co., Baltimore.
Reeves Bros. Co., Alliance, O.
Riter-Conley Mfg. Co., Pittsburg, Pa.
Sturtevant, B. F., Co., Hyde Park, Mass.
Vulcan Iron Works, Wilkes-Barre, Pa.
Warren City Tank & Boiler Works, Warren, O.

Lamp Posts
Belmont Iron Works, Philadelphia.
Bethlehem Fdy. & Mach. Co., So. Bethlehem, Pa.
Drummond, M. J., & Co., New York.
Fox, John, & Co., 253 Broadway, New York.

Lamps and Lanterns—Railway
General Electric Co., Schenectady, N. Y.
Safety Car Heating & Lighting Co., New York.

Lath, Metal (See Fireproof Construction)

Lawyers—Patent
Macdonald & Macdonald, 100 Broadway, N. Y.
Straley & Hasbrouck, 257 Broadway, New York.

Lights—Sidewalk and Vault (See Skylights)

Lights—Contractors'
Kitson Hydro-Carbon Heat & Inc. Ltg. Co., Phila.
Wells Light Mfg. Co., New York.

Locomotives—Compressed Air
American Locomotive Co., New York.
Baldwin Locomotive Works, Philadelphia.
Davenport Locomotive Works, Davenport, Ia.
Porter, H. K., Co., Pittsburg, Pa.

Locomotives—Electric and Battery
American Locomotive Co., 111 Broadway, N. Y.
Baldwin Locomotive Works, Philadelphia.
Davenport Locomotive Works, Davenport, Ia.
General Electric Co., Schenectady, N. Y.
Hunt, C. W., & Co., Stapleton, S. I., N. Y.
Koppel, Arthur, 66 Broad St., New York.
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.

Locomotives—Geared
Byers, John F., Machine Co., Ravenna, O.
Hildenbrand, William, 1 Broadway, New York.
Lima Locomotive & Machine Co., Lima, O.

Locomotives — Industrial and Light (See also Second-Hand Supplies)
Carlin's, Thos., Sons Co., Allegheny, Pa.
Continental Railway Equip. Co., New York.
Davenport Locomotive Works, Davenport, Ia.
Fitz-Hugh, Luther, Co., Chicago.
Hunt, C. W., Co., West New Brighton, N. Y.
Keystone Equip't Co., West St. Bldg., New York.
Koppel, Arthur, Co., New York.
Lima Locomotive & Machine Co., Lima, O.
Porter, H. K., Co., Pittsburg, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.
Torbert, A. C., & Co., Chicago.
Vulcan Iron Works, Wilkes-Barre, Pa.
Watson, Benj., New York.
Wiener, Ernst, Co., New York.
Wonham-Magor Engineering Co., New York.

Locomotives—Steam
American Locomotive Co., 111 Broadway, N. Y.
Baldwin Locomotive Works, Philadelphia.
Davenport Locomotive Works, Davenport, Ia.
Fitz-Hugh, Luther, Co., Chicago.
Lima Locomotive & Machine Co., Lima, O.
Males, The, Co., New York.
Porter, H. K., 531 Wood St., Pittsburg, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.
Torbert, A. C., & Co., Chicago.

Logging Outfits and Machinery
Browning Eng. Co., Cleveland.
Fitz-Hugh, Luther, Co., Chicago.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive & Machine Co., Lima, O.
Marion Steam Shovel Co., Marion, O.
Porter, H. K., Co., Pittsburg, Pa.
Troy Wagon Works Co., Troy, O.

Lubricators (See Steam Specialties)

Machine Tools
Albree, Chester B., Allegheny, Pa.
Allen, John F., 370 Girard Ave., New York.
Bethlehem Fdy. & Machine Co., So. Bethlehem, Pa.
Builders' Iron Foundry, Providence, R. I.
Dallett, Thos. H., Co., Philadelphia.
Fairbanks, Morse & Co., Chicago.
General Pneumatic Tool Co., New York.
Hanna Engineering Wks., 820 Elston Ave., Chicago.
Helwig Mfg. Co., St. Paul, Minn.
Pels, Henry, & Co., 68 Broad St., N. Y. City.
Stow Flexible Shaft Co., Philadelphia.

Machinery—Special
Fawcus Machine Co., Pittsburg.
Werner & Pfleiderer, Saginaw, Mich.

Machinery—Second-Hand (See Second-Hand Supplies)

Meters, Meter Boxes and Fittings
American District Steam Co., Lockport, N. Y.
Berger, C. L., & Sons, Boston.
Bristol Co., Waterbury, Conn.
Buffalo Meter Co., Buffalo, N. Y.
Builders' Iron Foundry, Providence, R. I.
Clow, James B., & Sons, Chicago.
Drummond, M. J., & Co., 182 Broadway, N. Y.
General Electric Co., Schenectady, N. Y.
Hersey Mfg. Co., Boston.
National Meter Co., 84 Chambers St., New York.
Neptune Meter Co., L. I. City, N. Y.
Pittsburg Meter Co., East Pittsburg, Pa.
Simplex Meter Co., 112 N. Broad St., Philadelphia.
Thomson Meter Co., Brooklyn, N. Y.
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.
Worthington, Henry R., 118 Liberty St., N. Y.

Mineral Wool
U. S. Mineral Wool Co., 143 Liberty St., N. Y.
Johns-Manville Co., H. W., 100 William St., N. Y.

Mining and Mill Machinery and Supplies (See also Coal and Ore Handling)
Abner-Doble Co., San Francisco.
American Process Co., New York.
Austin Mfg. Co., Chicago.
Bacon, Earle C., 26 Cortlandt St., New York.
Bartlett, C. O., & Snow Co., Cleveland, O.
Beatty, M., & Sons Co., Welland, Ont.
Bethlehem Fdy. & Machine Co., So. Bethlehem, Pa.
Bradley Pulverizer Co., 92 State St., Boston.
Cresson, Geo. V., Co., 141 Liberty St., New York.
Drake Standard Machine Works, Chicago.
Fairbanks, Morse & Co., Chicago.
Fuller Eng. Co., Allentown, Pa.
Ingersoll-Rand Co., 11 Broadway, New York.
Jeffrey Mfg. Co., Columbus, O.
Koppel, Arthur, Co., New York.
Leschen, A., & Sons Rope Co., St. Louis.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Link-Belt Co., Philadelphia.
McKiernan Drill Co., 170 Broadway, New York.
Marion Steam Shovel Co., Marion, O.
Norwalk Iron Works Co., South Norwalk, Conn.
Oliver, Wm. J., Mfg. Co., Knoxville, Tenn.
Power & Mining Machinery Co., Cudahy, Wis.
Robins Conveying Belt Co., New York.
Sullivan Machinery Co., Chicago.
Vulcan Iron Works, Wilkes-Barre, Pa.
Webster Mfg. Co., Chicago.
Wellman-Seaver-Morgan Co., Cleveland, O.
Wiener, Ernst, Co., New York.

Mixers—Cement, Asphalt and Mortar
Alexander Iron Works, Syracuse, N. Y.
Atlas Dryer Co., Cleveland, O.
Bartlett, C. O., & Snow Co., Cleveland, O.
Caldwell, H. W., & Son Co., Chicago.
Fuller Eng. Co., Allentown, Pa.
Hains, P. C., 416 McGill St., Washington.
International Fence & Fireproof Co., Columbus, O.
Interstate Engineering Co., Bedford, O.
Jeffrey Mfg. Co., Columbus, O.
Kent Mill Co., 170 Broadway, New York.
Municipal Engineering & Contracting Co., Chicago.
Smidth, F. L., & Co., New York.
Ransome Concrete Machinery Co., 11 B'way, N. Y.
Taylor Iron & Steel Co., Highbridge, N. J.
Vulcan Iron Works, Wilkes-Barre, Pa.

Motors—Compressed Air
General Pneumatic Tool Co., Montour Falls, N. Y.
Helwig Mfg. Co., St. Paul, Minn.
Stow Flexible Shaft Co., Philadelphia.
Sturtevant, B. F., Co., Hyde Park, Mass.

Motors—Water and Steam (See Turbines)

Nickel Steel
Orford Copper Co., New York.

Nuts and Nut-Locks
American Bridge Co., 42 Broadway, New York.
Cleveland City Forge Co., Cleveland, O.
Steward & Romaine Mfg. Co., Philadelphia.

Packing—Flange and Joint
Clow, James B., & Sons, Chicago.
Detroit Leather Spec. Co., Detroit, Mich.
Johns-Manville Co., H. W., New York.
New York Lead Wool Co., New York.
Power Specialty Co., 126 Liberty St., New York.
United Lead Co., New York.

Paint, Varnish, Metal Coatings
Barrett Mfg. Co., 17 Battery Place, New York.
Buchanan-Foster Co., Philadelphia.
Carbolineum Wood Preserving Co., New York.
Detroit Graphite Mfg. Co., 141 Broadway, N. Y.
Dixon, Joseph, Crucible Co., Jersey City, N. J.
Goheen Mfg. Co., Canton, O.
Hammond, Boynton Paint & Chemical Co., Norwich, Conn.
Hydrex Felt & Eng. Co., 120 Liberty St., N. Y.
National Paint Works, Williamsport, Pa.
Nubian Paint & Varnish Co., Chicago.
Rinald Brothers, Philadelphia.
Sicilian Asphalt Paving Co., New York.
Smith, Edward, & Co., 43 Broadway, New York.
Standard Paint Co., New York.
Toch Bros., 468 West Broadway, New York.
Waterproofing Co., The, 151 W. 28th St., N. Y.

Paint and Whitewash Spraying Machines
Bartlett, C. O., & Snow Co., Cleveland, O.

Paper, Blue Print and Apparatus (See Blue Print Apparatus)

Paper—Detail
Mittineague Paper Co., Mittineague, Mass.

Paving Blocks—Stone
Alpha Portland Cement Co., Alpha, N. J.
Leopold, J., & Co., 13 Broadway, New York.

Paving Blocks—Wood (See Creosoting)

Pile Drivers, Hammers and Jets
American Hoist & Derrick Co., St. Paul, Minn.
Austin Mfg. Co., Chicago, Ill.
Bartlett, A. F., & Co., Saginaw, Mich.
Beatty, M., & Sons Co., Welland, Ont.
Briggs, J. M., 17 Battery Pl., New York.
Bucyrus Co., South Milwaukee, Wis.
Dobbie Fdy. & Mach. Co., Niagara Falls, N. Y.
Fiory, S., Mfg. Co., Bangor, Pa.
Gilbreth, F. B., 34 West 28th St., New York.
Hayward Co., 97 Cedar St., New York.
Industrial Works, Bay City, Mich.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Mead Morrison Mfg. Co., Boston.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Pittsburg (Pa.) Industrial Iron Works.
Toledo Foundry & Machine Co., Toledo, O.
Vulcan Iron Works, 47 Milwaukee Ave., Chicago.
Vulcan Iron Works Co., Toledo, O.

Pile Shoes
Edson Mfg. Co., 257 Atlantic Ave., Boston.
Janney, Steinmetz & Co., Drexel Bldg., Phila.
Patterson, W. W., Co., 54 Water St., Pittsburg.
Taylor Iron & Steel Co., Highbridge, N. J.

Piles and Piling—Concrete
Cowing Engineering Co., Cleveland, O.
Foundation Co., New York.
Raymond Concrete Pile Co., Chicago.
Simplex Concrete Piling Co., Philadelphia.
Underwriters' Eng. & Con. Co., 34 W 28th St., N.Y.

Piles—Sheet (See Creosoting)

Piles—Interlocking
American Bridge Co., New York.
Carnegie Steel Co., Pittsburg, Pa.
Jackson, Geo. W., Inc., Chicago, Ill.
Nat'l Interlocking Steel Sheeting Co., Chicago.
U. S. Steel Piling Co., Chicago, Ill.
Vanderkloot Steel Piling Co., Chicago.

Pipe—Covering
H. W. Johns-Manville Co., New York.

Pipe—Iron and Steel
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe Mfg. Co., 112 No. Broad St., Phila.
Bellefontaine Bridge Co., Bellefontaine, O.
Bethlehem Fdy. & Machine Co., So. Bethlehem, Pa.
Builders' Iron Foundry, Providence, R. I.
Central Foundry Co., New York.
Clow, James B., & Sons, Chicago.
Coldwell-Wilcox Co., Newburgh, N. Y.
Dimmick Pipe Co., Birmingham, Ala.
Donaldson Iron Co., Emaus, Lehigh Co., Pa.
Drummond, M. J., & Co., 182 Broadway, N. Y.
Fox, John, & Co., 253 Broadway, New York.
Gillespie, T. A., & Co., Pittsburg, Pa.
Lynchburg Fdy. Co., 220 Broadway, New York.
Massillon Iron & Steel Co., Massillon, O.
McWane Pipe Works, Lynchburg, Va.
Millar, Charles, & Son Co., Utica, N. Y.
Pittsburg Mfg. Co., Pittsburg, Pa.
Union Hydraulic Works, Philadelphia.
U. S. Cast Iron Pipe & Foundry Co., New York.
Warren Foundry & Machine Co., New York.
Wood, R. D., & Co., 400 Chestnut St., Phila.

Pipe—Lead
Clow, James B., Sons, Chicago.
Drummond, M. J., & Co., 182 Broadway, N. Y.
Fox, John, & Co., 253 Broadway, New York.
Millar, Charles, & Son Co., Utica, N. Y.

Pipe—Reinforced Concrete
Reinforced Concrete Pipe Co., Jackson, Mich.

Pipe—Riveted Steel
American Spiral Pipe Works, Chicago.
Gillespie, D. A., & Co., Pittsburg, Pa.
McNeil, Jas., & Bro., Pittsburg, Pa.
Meehan Boiler & Const. Co., Lowellville, O.
Pittsburg (Pa.) Industrial Iron Works.
Petroleum Iron Works, Washington, Pa.
Reeves Bros. Co., Alliance, O.
Tippett & Wood, Phillipsburg, N. J.

Pipe—Vitrified Clay and Sewer
American Pipe Mfg. Co., Philadelphia.
American Sewer Pipe Co., Pittsburg, Pa.
Blackmer & Post Pipe Co., St. Louis.
Climax Road Machine Co., Marathon, N. Y.
Dickey, W. S., Clay Mfg. Co., Kansas City, Mo.
Drummond, M. J., & Co., 182 Broadway, N. Y.
East Ohio Sewer Pipe Co., Irondale, O.
Fox, John, & Co., 253 Broadway, New York.
Jackson, John H., 117 3d Ave., Albany, N. Y.
Laclede Fire Brick Mfg. Co., St. Louis.
Macomb Sewer Pipe Co., Kansas City, Mo.
Monmouth Mining & Mfg. Co., Monmouth, Ill.
Post Pipe Co., Texarkana, Tex.
Purington Paving Brick Co., Galesburg, Ill.
St. Mary's Sewer Pipe Co., St. Mary's, Pa.

Pipe and Poles—Wooden (See Creosoting)

Pipe Cutting and Threading Machines
Saunder's D., Sons, Yonkers, N. Y.
Smith, A. P., Mfg. Co., Newark, N. J.

Pipe Fittings (Brackets, Hangers, Repair Sleeves, Strainers, Etc.)
American Cast Iron Pipe Co., Birmingham, Ala.
Bourbon Copper & Brass Works, Cincinnati, O.
Central Foundry Co., New York.
Clow, James B., & Sons, Chicago.
Donaldson Iron Co., Emaus, Lehigh Co., Pa.
Dresser, S. R., Mfg. Co., Bradford, Pa.
Drummond, M. J., & Co., New York.
Fox, John, & Co., 253 Broadway, New York.
Lynchburg Foundry Co., 220 Broadway, N. Y.
Massillon (Ohio) Iron & Steel Co.
Michigan Pipe Co., Bay City, Mich.
Smith, A. P., Mfg. Co., Newark, N. J.
Union Hydraulic Works, Philadelphia.
Watkins, Thomas, Johnstown, Pa.

Pipe Joints—Flexible Water Pipe, and High Pressure Pipe
Coldwell-Wilcox Co., Newburgh, N. Y.
Donaldson Iron Co., Emaus, Lehigh Co., Pa.
Dresser, S. R., Mfg. Co., Bradford, Pa.
Fox, John, & Co., 253 Broadway, New York.
Holmes, A. L., Grand Rapids, Mich.
Warren Foundry & Machine Co., New York.
Watkins, Thomas, Johnstown, Pa.

Pitometers
Pitometer Co., New York.

Plows—Contractors' (See Road Machinery)

Pneumatic Tools, Riveters, Clippers, Etc.
Albree, Chester B., Allegheny, Pa.
Allen, John F., 370 Gerard Ave., New York.
American Air Compressor Works, New York.
Chicago Pneumatic Tool Co., Chicago.
Clayton Air Compressor Works, New York.
Dallett, Thos H., Co., Philadelphia.
General Pneumatic Tool Co., Montour Falls, N. Y.
Hanna Engineering Wks., 820 Elston Ave., Chicago.
Helwig Mfg. Co., St. Paul, Minn.
Ingersoll-Rand Co., New York.
Pels, Henry, & Co., 68 Broad St., N. Y. City.
Reliance Machine Co., St. Louis.
Geo. H. Sampson Co., Boston, Mass.
Stow Flexible Shaft Co., Philadelphia.

Poles and Posts—Iron and Steel, Trolley Posts, Etc.
Belmont Iron Works, Philadelphia.
Drummond, M. J., & Co., New York.
Donaldson Iron Co., Emaus, Lehigh Co., Pa.
Fox, John, & Co., 253 Broadway, New York.

Portable Buildings, Greenhouses, Etc.
Rendle, A. E., 428 11th Ave., New York.
Springfield Port. House Co., Springfield, Mass.

Power Transmission Machinery
American Mfg. Co., 65 Wall St., New York.
Broderick & Bascom Rope Co., St. Louis.
Browning Engineering Co., Cleveland, O.
Caldwell, H. W., & Son Co., Chicago.
Contractors' Plant Mfg. Co., Buffalo, N. Y.
Cresson, G. V., Co., 141 Liberty St., New York.
Fiory, S., Mfg. Co., Bangor, Pa.
Jeffrey Mfg. Co., Columbus, O.
Leschen, A., & Sons Rope Co., St. Louis.
Link-Belt Co., Philadelphia.
Minn. Steel & Machinery Co., Minneapolis.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Poole Engineering & Machine Co., Baltimore.
Power & Mining Machinery Co., Cudahy, Wis.
Robins Conveying Belt Co., New York.
Rockwood Mfg. Co., Indianapolis, Ind.
Webster Mfg. Co., Chicago.
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.

Pulleys and Blocks
Boston & Lockport Block Co., Boston.
Byers, John F., Machine Co., Ravenna, O.
Caldwell, H. W., & Son Co., Chicago.
Cresson, G. V., Co., 141 Liberty St., New York.
Dobbie Fdy. & Mach. Co., Niagara Falls, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Leschen, A., & Sons Rope Co., St. Louis.
N. J. Foundry & Machine Co., New York.
Poole Engineering & Machine Co., Baltimore.
Risdon-Alcott Turbine Co., Mount Holly, N. J.
Smith, S. Morgan Co., York, Pa.
Terry & Tench, New York.
Variety Iron Works Co., Cleveland, O.

Pulverizers (See Crushers)

Pumps—Air Lift and Artesian
Alberger Condenser Co., 96 Liberty St., New York.
American Air Compressor Works, New York.
Cameron, A. S., Steam Pumps Works, New York.
Cook Well Co., St. Louis.
Davidson, M. T., 43 Keap St., Brooklyn, N. Y.
Dean Bros.' Steam Pump Works, Indianapolis, Ind.
Deane Steam Pump Co., 116 Liberty St., N. Y.
Deming Co., Salem, O.
Downie Pump Co., Downieville, Pa.
Epping-Carpenter Co., Pittsburg, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hill Machine Co., Anderson, Ind.
Ingersoll-Rand Co., New York.
McGowan, John H., Co., Cincinnati, O.
Otto Gas Engine Co., Philadelphia.
Platt Iron Works, Dayton, O.
Southwark Foundry & Machine Co., Philadelphia.
U. S. Wind Engine & Pump Co., Batavia, Ill.
Weinman Machine Works, Columbus, O.

Pumps—Diaphragm
Bond, Harold L., & Co., 140 Pearl St., Boston.
Boston & Lockport Block Co., Boston.
Deming Co., Salem, O.
Edson Mfg. Co., 255 Atlantic Ave., Boston.
Goulds Mfg. Co., Seneca Falls, N. Y.

Pumps—Electric
Cameron, A. S., Steam Pump Works, New York.
Dayton Hydraulic Machy. Co., Dayton, O.
Davidson, M. T., 43 Keap St., Brooklyn, N. Y.
Dean Bros.' Steam Pump Wks., Indianapolis, Ind.
De Laval Steam Turbine Co., Trenton, N. J.
Deming Co., Salem, O.
Downie Pump Co., Downieville, Pa.
General Electric Co., Schenectady, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Holly Mfg. Co., 148 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Wheeler, C. H., Mfg. Co., Philadelphia.

Pumps—Fire, Force and Power
Atlas Engine Works, Indianapolis, Ind.
Blake, George F., Mfg. Co., New York.
Cameron, A. S., Steam Pump Works, New York.
Cook Well Co., St. Louis.
Dayton Hydraulic Machy. Co., Dayton, O.
Dean Bros.' Steam Pump Wks., Indianapolis, Ind.
Deming Co., Salem, O.
Edson Mfg. Co., 255 Atlantic Ave., Boston.
Goulds Mfg. Co., Seneca Falls, N. Y.
McGowan, John H., Co., Cincinnati, O.
No. Penn Iron Works, Philadelphia, Pa.
Otto Gas Engine Co., Philadelphia.
U. S. Wind Engine & Pump Co., Batavia, Ill.
Weinman Machine Works, Columbus, O.
Wheeler, C. H., Mfg. Co., Philadelphia.

Pumps—Steam, Sewage, Quarry, Mining, Irrigating and Dredging, Centrifugal and Rotary (See Engines—Stationary)

Pumps—Vacuum
Alberger Condenser Co., 96 Liberty St., New York.
Bury Compressor Co., Erie Pa.
Cameron, A. S., Steam Pump Works, New York.
Dean Bros.' Steam Pump Wks., Indianapolis, Ind.
Deming Co., Salem, O.
Epping-Carpenter Co., Pittsburg, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
International Steam Pump Co., New York.
Jeanesville Iron Works Co., Hazleton, Pa.
McGowan, John H., Co., Cincinnati, O.
Platt Iron Works, Dayton, O.
Reliance Machine Co., St. Louis.
Southwark Foundry & Machine Co., Philadelphia.
Van Wie Pump Co., Syracuse, N. Y.
Wheeler, C. H., Mfg. Co., Philadelphia.

Pumps—Wind-Mill
Baltimore Cooperage Co., Baltimore, Md.
Cook Well Co., St. Louis.
Deming Co., Salem, O.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Downie Pump Co., Downieville, Pa.
Fairbanks, Morse & Co., Chicago.
U. S. Wind Engine & Pump Co., Batavia, Ill.

Pyrometers—Electric
Bristol, Wm. H., New York.

Railings, Guards, Fences, Etc.
Albree Iron Works, Allegheny, Pa.
Attica Bridge Co., Attica, Ind.
Berlin (Conn.) Construction Co.
Belmont Iron Works, Philadelphia.
Boston Bridge Works, 47 Winter St., Boston.
Joliet Bridge & Iron Co., Joliet, Ill.
Kratzer, W. H., & Co., Pittsburg.
New England Structural Co., Boston.
Pittsburg Steel Co., Pittsburg, Pa.
Schreiber, L. & Sons Co., Cincinnati, O.
Stupp Bros.' Bridge & Iron Co., St. Louis.

Rails
Atlantic Equipment Co., 111 Broadway, New York.
Foster, L. B., Co., Pittsburg.
Hyde Bros. & Co., Pittsburg.
Koppel, Arthur, 66 Broad St., New York.
Males Co., The, New York.
Oliver, Wm. J., Mfg. Co., Knoxville, Tenn.
Pennsylvania Steel Co., Philadelphia.
Richardson & Co., Pittsburg, Pa.
Robinson & Orr, Pittsburg, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.
Watson, Benj., New York.
Weiner, Ernst., Co., 66 Broad St., New York.
Wonham-Magor Engineer Co., New York.
Woodruff, Geo. S., Philadelphia.

Rail Joints, Fastenings, Etc.
Rail Joint Co., New York.

Rails—Second-Hand (See Second-Hand Supplies and For Sale Ads.)

Railway Track Specialties and Equipment
Abbott-Gamble Co., 620 Chestnut St., St. Louis.
Berger Mfg. Co., Canton, O.
Blome, R. S., Co., Chicago.
Buda Foundry & Mfg. Co., Chicago.
Fairbanks, Morse & Co., Chicago.
Hildreth & Co., Pittsburg, Pa.
Hunt, C. W., & Co., 45 Broadway, New York.
King Bridge Co., Cleveland, O.
Kalamazoo Ry. Supply Co., Kalamazoo, Mich.
Koppel, Arthur, Co., New York.
Pennsylvania Steel Co., Philadelphia.
Pittsburg Steel Co., Pittsburg, Pa.
Rail Joint Co., 29 W. 34th St., New York.
Railroad Supply Co., Bedford Bldg., Chicago.
Railway Steel-Spring Co., 71 Broadway, N. Y.
Ramapo Iron Works, Hillburn, N. Y.
Watson, Benj., New York.
Wiener, Ernst, Co., New York.

Railways—Industrial and Narrow Gage (See Cars and Locomotives)

Reinforced Concrete Construction (See Fireproof Construction)

Rivets—Iron and Steel
Mount Vernon Bridge Co., Mt. Vernon, O.
New England Structural Co., Boston.

Riveters (see Machine Tools)

Road Machinery, Road Rollers, Plows, Screens, Etc.
Austin Mfg. Co., Chicago.
Buffalo Steam Roller Co., Buffalo, N. Y.
Climax Road Machine Co., Marathon, N. Y.
Erie Machine Shops, Erie, Pa.
Good Roads Machinery Co., New York.
Iroquois Iron Works, Philadelphia, Pa.
Kelly-Springfield Road Roller Co., Springfield, O.
Lonsnecker, Chas., & Co., New York.
Monarch Road Roller Co., Groton, N. Y.
Rodger Ballast Car Co., Chicago.
Scholl, Julian, & Co., 126 Liberty St., New York.
Vulcan Iron Works Co., Toledo, O.
Western Wheeled Scraper Co., Aurora, Ill.

Rolling Mill Machinery
Fawcus Machine Co., Pittsburg.
Penna. Engineering Works, New Castle, Pa.
Poole Engineering & Machinery Co., Baltimore.
Variety Iron Works Co., Cleveland, O.
Wellman-Seaver-Morgan Co., Cleveland, O.

Roofing
Genasco Roofing Co., Philadelphia.
Sicilian Asphalt Paving Co., New York.
Hunkins Willis Lime & Cement Co., St. Louis, Mo.

Roofing—Glass (See Skylights)

Rope Fittings, Couplings and Cordage
American Hoist & Derrick Co., St. Paul, Minn.
Broderick & Bascom Rope Co., St. Louis.
Lambert Hoisting Engine Co., Newark, N. J.
Leschen, A., & Sons Rope Co., St. Louis.
Roebling's, John A., Sons Co., Trenton, N. J.
Trenton Iron Co., Trenton, N. J.

Saw Mill Machinery
Bartlett, A. F., & Co., Saginaw, Mich.
Jeffrey Mfg. Co., Columbus, O.
Leschen, A., & Sons Rope Co., St. Louis.
Risdon-Alcott Turbine Co., Mount Holly, N. J.

Scales—Weighing (See Testing Machines)

Scale Boxes.
Cyclopean Iron Works Co., Jersey City.
Pittsburg (Pa.) Industrial Iron Works.

Scrapers—Road (See Road Machinery)

Schools and Colleges (See College and School Advertisements)

Second-Hand Supplies and Agents
Avery, Charles F., 45 Broadway, New York.
Braden, James S., 26 Cortlandt St., New York.
Briggs, Marvin, New York.
Carlin's, Thomas, Sons Co., Allegheny, Pa.
Carlin Mach. & Supply Co., Allegheny, Pa.
Chicago House-Wrecking Co., Chicago.
Cincinnati Equipment Co., Cincinnati, O.
Continental Car & Equipment Co., New York.
Contractors' Supply & Equip. Co., Chicago.
Dallett & Co., 201 Walnut Pl., Philadelphia.
Davis, M. E., New York.
Foster Co., L. B., Pittsburg.
Harper Machinery Co., New York.
Hitner, H. A., Sons, Philadelphia.
Keystone Equip't Co., West St. Bldg., New York.
Males Co., 713 Traction Bldg., Cincinnati, O.
Pickett, H. W., House Bldg., Pittsburg, Pa.
Porter, N. B., 11 Broadway, New York.
Richardson & Co., Pittsburg, Pa.
Robinson & Orr, Pittsburg, Pa.
Sampson, G. H., Co., Boston, Mass.
Shannon, J. J., & Co., Philadelphia.
Torbert, A. C., Co., Chicago.
Watson, Benj., 66 Beaver St., New York.
Wickes Bros., 137 Liberty St., New York.
Woodruff, George S., Philadelphia.
Zelnicker, W. A., Supply Co., St. Louis.

Separators—Steam, Grease and Oil
American District Steam Co., Lockport, N. Y.
Bethlehem Fdy. & Mach. Co., So. Bethlehem, Pa.
Coldwell-Wilcox Co., Newburgh, N. Y.
D'Este, Julian, Co., 24 Canal St., Boston.
Goubert Mfg. Co., New York.
Harrison Safety Boiler Works, Philadelphia.

Sewage and Garbage Disposal and Septic Tanks
American Dittier Sewage Disp. Co., 1123 Broadway, New York.
Cameron Septic Tank Co., Chicago.
City Wastes Disposal Co., New York.
Edson Mfg. Co., 257 Atlantic Ave., Boston.
Electric Welding Co., Pittsburg.
Lewis & Kitchen, Chicago.
Marion Incline Filter & Heater Co., Marion, O.
N. Y. Sewage Disposal Co., New York.
Pacific Flush Tank Co., 184 La Salle St., Chicago.

Sewer Appliances and Specialties
Blaw Collapsible Steel Centering Co., Pittsburg.
Bond, Harold L., 140 Pearl St., Boston.
De La Hunt Flush Tank Co., Cedar Rapids, Ia.
Duplex-Mfg. & Fdy. Co., Cleveland, O.
Loomis-Manning Filter Co., Philadelphia.
Parmley, W. C., 78 Fifth Ave., New York.
Pittsburg Filter Co., Pittsburg, Pa.
Steel Protected Concrete Co., Philadelphia.

Sheaves for Wire Rope, Hoisting
American Hoist & Derrick Co., St. Paul, Minn.
Boston & Lockport Block Co., Boston.
Byers, John L., Machine Co., Ravenna, O.
Caldwell, H. W., & Son Co., Chicago.
Caldwell, W. E., Co., Louisville, Ky.
Contractors' Plant Mfg. Co., Buffalo, N. Y.
Dobbie Fdy. & Machine Co., Niagara Falls, N. Y.
Patterson Co., W. W., Pittsburg, Pa.
Poole Engineering & Machine Co., Baltimore.
Mead-Morrison Mfg. Co., Boston.
Taylor Iron & Steel Co., Highbridge, N. J.
Union Iron Works, Hoboken, N. J.
Vulcan Iron Works Co., Toledo, O.

Sheet Iron and Sheet Metal Work
American Sheet & Tin Plate Co., Pittsburg, Pa.
Hodge Boiler Works, East Boston, Mass.
McNeil, Jas. & Bro. Co., Pittsburg, Pa.
National Dry Kiln Co., Indianapolis, Ind.
Petroleum Iron Works Co., Washington, Pa.
Pittsburg (Pa.) Industrial Iron Works.
Scaife, Wm. B., & Sons Co., Pittsburg, Pa.
Struthers, Wells & Co., Warren, Pa.
Union Iron Works, Hoboken, N. J.
Virginia Bridge & Iron Co., Roanoke, Va.

Shovels and Picks—Hand
Bond, Harold L., Co., 140 Pearl St., Boston.
Fairbanks, Morse & Co., Chicago.
Motley, Green & Co., 66 Broad St., New York.
Wyoming Shovel Works, Wyoming, Pa.

Shovels—Steam (See Ditching Machinery and For Sale Ads.)

Signaling Apparatus
Contractors' Plant Mfg. Co., Buffalo, N. Y.
Fairbanks, Morse & Co., Chicago.
General Electric Co., Schenectady, N. Y.
New York Switch & Crossing Co., Hoboken, N. J.
Ramapo Iron Works, Hillburn, N. Y.
Railroad Supply Co., Chicago.

Skylights and Sidewalk Lights
Berger Mfg. Co., Canton, O.
Brooks, T. H., & Co., Cleveland, O.
Burt Mfg. Co., Akron, O.
Irwin, Thos. W., Mfg. Co., Allegheny, Pa.
Rendle, A. E., 18 West 34th St., New York.
Tucker & Vinton Corp., 156 Fifth Ave., N. Y.
Valle & Young, Baltimore.
Van Noorden, E., Co., Boston.

Standpipes and Tanks (See also Tanks and Towers)
Granger, A. D., Co., New York.
Kennicott Water Softening Co., Chicago.
Milwaukee Bridge Co., Milwaukee, Wis.
Pittsburg (Pa.) Industrial Iron Works.
Riter-Conley Mfg. Co., 55 Water St., Pittsburg.
Tippett & Wood, Phillipsburg, N. J.
U. S. Wind Engine & Pump Co., Batavia, Ill.
Virginia Bridge & Iron Co., Roanoke, Va.

Steam Specialties
Bristol Co., Waterbury, Conn.
Clow, Jas. B., & Sons, Chicago, Ill.
D'Este, Julian, Co., Boston, Mass.
DuVivier, Ernest H., 16 Church St., New York.
Fairbanks, Morse & Co., Chicago.
General Electric Co., Schenectady, N. Y.
Golden Anderson Valve Specialty Co., Pittsburg.
Lunkenheimer Co., Cincinnati, O.
Michigan Pipe Co., Bay City, Mich.
Queen & Co., Philadelphia, Pa.
Power Specialty Co., 111 Broadway, New York.
Sturtevant, B. F., Co., Hyde Park, Mass.
Westinghouse Electric & Mfg. Co., Pittsburg.

Steel Structures (See Bridges)

Stokers—Mechanical
Atlas Dryer Co., Cleveland, O.
Babcock & Wilcox Co., 85 Liberty St., N. Y.
Bartlett, C. O., & Snow Co., Cleveland, O.
Westinghouse Machine Co., Pittsburg.

Stone—Broken, and Quarries
Bound Brook (N. J.) Crushed Stone Co.
Kichline, G. F., Easton, Pa.
Leopold, J., & Co., 18 Broadway, New York.
McMullen, Arthur, Co., New York.
Tomkins, Calvin, 17 Battery Place, New York.

Strainers—Well
Cook Well Co., St. Louis, Mo.
Johnson, E. E., St. Paul, Minn.

Street Cleaning Implements, Machinery and Snow Plows
Acme Road Machinery Co., Frankfort, N. Y.
Austin Mfg. Co., Chicago.
Bond, Harold L., & Co., 140 Pearl St., Boston.
Good Roads Machinery Co., 136 Liberty St., N. Y.
Scholl, Julian, & Co., 126 Liberty St., New York.

Structural Work (See Bridges)

Superheaters—Steam
Parker Boiler Co., Philadelphia.
Power Specialty Co., New York.

Switch Stands and Switches (See Frogs)

Tanks—Gas and Oil
Carroll-Porter Boiler & Tank Co., Pittsburg, Pa.
Graver, Wm., Tank Works, East Chicago, Ind.
Hammond Iron Works, Warren, Pa.
Petroleum Iron Works Co., Washington, Pa.
Pittsburg (Pa.) Industrial Iron Works.
Reeves Bros. Co., Alliance, O.
Sharon Boiler Works, Sharon, Pa.
Tippett & Wood, Phillipsburg, N. J.

Tanks—Grain and Storage
Berquist, A. S., 515 Bedford Ave., Brooklyn, N. Y.
Bethlehem Fdy. & Mach. Co., So. Bethlehem, Pa.
Browning Engineering Co., Cleveland, O.
Caldwell, W. E., Co., Louisville, Ky.
Minneapolis Steel & Mach. Co., Minneapolis.
Petroleum Iron Works Co., Washington, Pa.
Pittsburg (Pa.) Industrial Iron Works.
Reeves Bros. Co., Alliance, O.
Riter-Conley Mfg. Co., 55 Water St., Pittsburg.
Steel Storage Elevator & Const. Co., Buffalo.
Tippett & Wood, Phillipsburg, N. J.
Warren City Tank & Boiler Wks., Warren, O.
Wood, R. D., & Co., Philadelphia.

Tanks—Septic (See Sewage Disposal)

Tanks and Towers
American Creosote Works, New Orleans, La.
Baltimore Cooperage Co., Baltimore.
Caldwell, W. E., Co., Louisville, Ky.
Des Moines Bdge. & Iron Wks., Des Moines, Ia.
Fairbanks, Morse & Co., Chicago.
Granger, A. D., Co., New York.
Kalamazoo (Mich.) Railway Supply Co.
National Dry Kiln Co., Indianapolis, Ind.
National Wood Pipe Co., Los Angeles, Cal.
Phillips & Worthington, 136 Liberty St., N. Y.
Pittsburg (Pa.) Industrial Iron Works.
Southwestern Bridge Co., Joplin, Mo.
U. S. Wind Engine & Pump Co., Batavia, Ill.

Tapes—Steel (See Draftsmen's Supplies and Instruments)

Tents and Awnings
Columbus Tent & Awning Co., Columbus, O.
McAuley, J. A., Tent & Awning Co., Columbus, O.
Murray Co., 59 W. Washington St., Chicago.

Testing Machines and Scales
Fairbanks, Morse & Co., Chicago.
Riehle Bros. Testing Machine Co., Philadelphia.
Ulmer, J. C., & Co., 113 Prospect Ave., Cleveland.

Ties—Steel and Wood (See Railway Track Specialties)

Tiles—Roofing
Ludowici-Celadon Co., Chicago.
Hunkins Willis Lime & Cement Co., St. Louis, Mo.

Tipples and Bunkers
Berquist, A. S., 515 Bedford Ave., B'klyn, N. Y.
Link-Belt Co., Philadelphia.
Mount Vernon Bridge Co., Mt. Vernon, O.
Pennsylvania Steel Co., Philadelphia.
Penn Bridge Co., Beaver Falls, Pa.
Scaife, Wm. B., & Sons Co., Pittsburg, Pa.
Wellman-Seaver-Morgan Co., Cleveland, O.

Tools—Calking
Dallett, Thos. H., & Co., Philadelphia.
Ingersoll-Rand Co., 11 Broadway, New York.
Smith, A. P., Mfg. Co., Newark, N. J.

Tracklaying Machinery
Holman, D. F., Co., Chicago.

Track—Portable (See Railway Track Specialties)

Trench Brace Machines
Duff Mfg. Co., Pittsburg, Pa.
Kalamazoo (Mich.) Foundry & Machine Co.

Trench Machines and Supplies (See Ditching Machinery)

Trolleys
Yale & Towne Mfg. Co., New York.

Trucks—Foundry and Warehouse
Boston & Lockport Block Co., Boston.
Koppel, Arthur, 66 Broad St., New York.
Mechanical Mfg. Co., Chicago.
Syracuse Chilled Plow Co., Syracuse, N. Y.

Turbines—Steam
Backus Water Motor Co., Newark, N. J.
De Laval Steam Turbine Co., Trenton, N. J.
Morris, I. P., Co., Philadelphia.
General Electric Co., Schenectady, N. Y.
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.
Worthington, Henry R., 114 Liberty St., N. Y.

Turbines—Water
Abner-Doble Co., 200 Fremont St., San Francisco.
Dayton Globe Iron Works Co., Dayton, O.
Leffel, Jas., & Co., Springfield, O.
Morris, I. P., Co., Philadelphia.
Pelton Water Wheel Co., San Francisco.
Risdon-Alcott Turbine Co., Mount Holly, N. J.
Smith, S. Morgan, Co., York, Pa.
Wellman-Seaver-Morgan Co., Cleveland, O.

Turnbuckles
Broderick & Bascom Rope Co., St. Louis, Mo.
Cleveland City Forge & Iron Co., Cleveland, O.
Cowing Engineering Co., Cleveland, O.
Janney, Steinmetz & Co., Philadelphia.
Leschen, A., & Sons Rope Co., St. Louis.
Merrill Bros., Kent Ave., Brooklyn, N. Y.
New Jersey Foundry & Machine Co., New York.
Toledo-Massillon Bridge Co., Toledo, O.

Turntables
American Bridge Co., 42 Broadway, New York.
Baltimore Bridge Co., Baltimore.
Boston Bridge Works, 47 Winter St., Boston.
Brown Hoisting Machinery Co., Cleveland, O.
Chicago Bridge & Iron Works, Chicago.
Coldwell-Wilcox Co., Newburgh, N. Y.
Hunt, C. W., Co., 45 Broadway, New York.
King Bridge Co., Cleveland, O.
Koppel, Arthur, 66 Broad St., New York.
Link-Belt Co., Philadelphia.
Minneapolis Steel & Mach Co., Minneapolis.
Mo. Valley Bdge. & Iron Works, Leavenworth, Kan.
Mount Vernon Bridge Works, Mt. Vernon, O.
New England Structural Co., Boston.
Passaic Steel Co., Paterson, N. J.
Pennsylvania Steel Co., Philadelphia.
Phoenix Bridge Co., 410 Walnut St., Philadelphia.
Shoemaker, Lewis F., & Co., Philadelphia.
Strobel Steel Construction Co., Chicago.
Vulcan Iron Works, 47 Milwaukee Ave., Chicago.
Wiener, Ernst, Co., 66 Broad St., New York.
Wonham-Magor Engineering Co., New York.

Valves and Valve Boxes
Abner-Doble Co., 200 Fremont St., San Francisco.
Bourbon Copper & Brass Works, Cincinnati, O.
Clow, James B., & Sons, Chicago.
Coffin Valve Co., Boston.
Coldwell-Wilcox Co., Newburgh, N. Y.
Darling Pump & Mfg. Co., Williamsport, Pa.
Dimmick Pipe Co., Birmingham, Ala.
Drummond, M. J., & Co., New York.
Fairbanks, Morse & Co., Chicago.
Foster Engineering Co., Newark, N. J.
Fox, John, & Co., 253 Broadway, New York.
Golden Anderson Valve Specialty Co., Pittsburg.
Kennedy Valve Mfg. Co., 50 Beekman St., N. Y.
Loetzer Valve & Mfg. Co., Monrocton, Pa.
Lunkenheimer Co., Cincinnati, O.
McGowan, John H., Co., Cincinnati, O.
McLean, John, 440 Water St., New York.
Pittsburg Mfg. Co., 28th St., Pittsburg, Pa.
Ross Valve Co., Troy, N. Y.
Simplex Valve & Meter Co., Philadelphia.
Smith, A. P., Mfg. Co., Newark, N. J.
Union Hydraulic Works, Philadelphia.
Water Works Equipment Co., New York.
Wellman-Seaver-Morgan Co., Cleveland, O.
Wood, R. D., & Co., Philadelphia.

Ventilating Apparatus, Blowers and Bellows
American Blower Co., Detroit, Mich.
American Gas Furnace Co., New York.
Backus Water Motor Co., Newark, N. J.
Berger Mfg. Co., Canton, O.
Buffalo Forge Co., Buffalo, N. Y.
Green Fuel Economizer Co., Matteawan, N. Y.
Marion Incline Filter & Heater Co., Marion, O.
Power Specialty Co., New York.
Randle, Arthur E., New York.
Sprague Electric Co., New York.
Sturtevant, B. F., Co., Hyde Park, Mass.

Ventilators
Burt Mfg. Co., Akron, O.
Irwin, Thos. W., Mfg. Co., Allegheny, Pa.

Wagons—Dump (See Carts)

Water Power Plants and Equipment
Backus Water Motor Co., Newark, N. J.
Caldwell, W. E., Co., Louisville, Ky.
Foundation Co., New York.
Leffel, James & Co., Springfield, O.
Gilbreth, F. B., 34 W. 26th St., New York.
Municipal Engineering & Contracting Co., Chicago.
National Wood Pipe Co., Los Angeles, Cal.
Poole Engineering & Machine Co., Baltimore.
Risdon-Alcott Turbine Co., Mount Holly, N. J.
Wellman-Seaver-Morgan Co., Cleveland, O.

Waterproofing (See also Asphalt and Paint)
Hammond Boynton Paint & Chem. Co., Norwich, Conn.
Hydrex Felt & Engineering Co., New York.
Theodore F. Koch, 79 Dearborn St., Chicago, Ill.
Nubian Paint Co., Chicago.
Sicilian Asphalt Co., 41 Park Row, New York.
Sandusky Portland Cement Co., Sandusky, O.
Waterproofing Co., The, New York.

Water Softening Plant and Water Purification and Filters
Am. Water Softening Co., 1011 Chestnut St., Phila.
Booth, W. M., Syracuse, N. Y.
Deutsch, Wm. M., 141 Broadway, New York.
Greer Filter Co., Philadelphia.
Harrison Safety Boiler Works, Philadelphia.
Helwig Mfg. Co., St. Paul, Minn.
Kennicott Water Softening Co., Chicago.
Lynn Filter Mfg. Co., Cincinnati, O.
Loomis-Manning Filter Co., Philadelphia.
Marion Incline Filter & Heater Co., Marion, O.
N. Y. Continental Jewell Filtration Co., N. Y.
Philadelphia Water Purification Co., Philadelphia.
Pittsburg Filter Mfg. Co., Pittsburg, Pa.
Roberts Mfg. Co., Philadelphia.
Scaife, Wm. B., & Sons Co., Pittsburg, Pa.
U. S. Wind Engine & Pump Co., Batavia, Ill.

Well Drilling (See Artesian Wells)

Wheelbarrows—Iron, Steel and Wood

Plows, Etc.
Acme Road Machinery Co., Frankfort, N. Y.
Cockburn Barrow & Mach. Co., Jersey City, N. J.
Ransome Concrete Machinery Co., New York.
Shannon, J. Jacob, & Co., Philadelphia.
Stuebner, G. L., Iron Works, L. I. City, N. Y.
Syracuse Chilled Plow Co., Syracuse, N. Y.
Union Iron Works, Hoboken, N. J.
Western Wheeled Scraper Co., Aurora, Ill.

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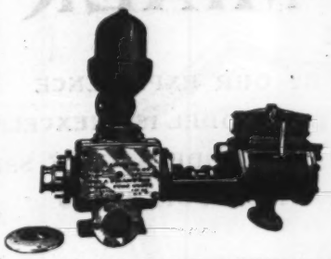

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	Situation Wanted Advs.	Situation Open Advs.	Miscellaneous Advs.	Totals
Engineering News,	***4637***	***2419***	***1864***	***8920***
Nearest Competitor, - -	1134	541	750	2425

Out of a total of ***11345 Want Advertisements*** carried by ENGINEERING NEWS and its nearest competitor, nearly **80%** WERE IN **Engineering News**

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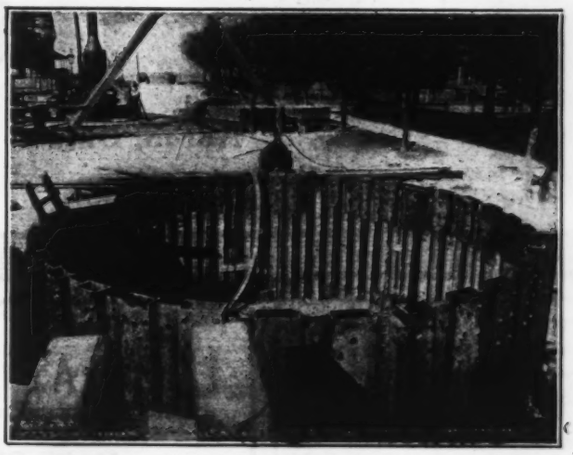

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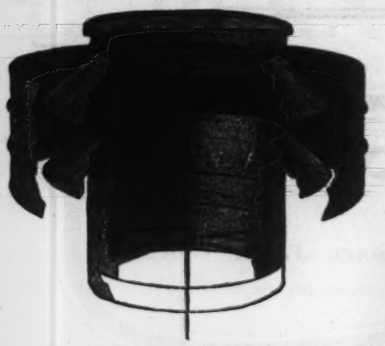

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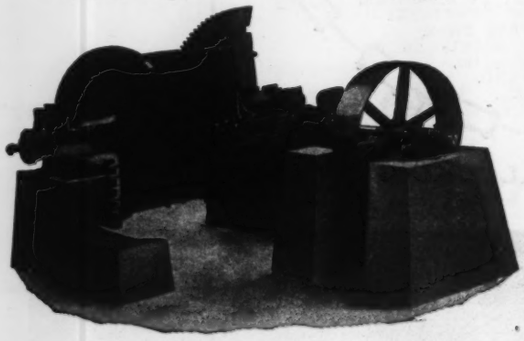

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MADE BY ACTUAL COUNT OF BONA FIDE ADVERTISEMENTS FOR THE YEAR 1906 :: :: ::

	Situations Wanted Ads.	Miscellaneous Wants	Situations Open	Total
Engineering News	3,041	1,931	1,530	6,502
Nearest Competitor	777	294	596	1,667

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Am Asphaltum & Rubber Co..... 7
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SOUTH AMERICA, MEXICO.—Electrical-Mechanical Engineer, with six years' experience in tropics, wishes responsible position with concern engaged in work in tropics. Experienced in construction and maintenance of electric power houses, lighting, pumping stations, steel structures, hoisting and conveying machinery, shops, reports, specifications, purchasng. Can work out original designs and methods to meet local conditions. Energetic, thoroughly acclimated, can successfully handle native labor. Investigation of record invited. Address "P. A. 24," Engineering News, New York. 24-3t

MECHANICAL ENGINEER and superintendent of construction desires work with mining company. Has had experience in the design and erection of rock-handling machinery and cyanide and concentration plants. Address 125 S. 6th St., Victor, Colo. 25-4t

POSITION WANTED by a graduate electrical and mechanical engineer (36). Experience includes design and specifications for power plants, lighting and heating; experimental work; business management; purchasing; consulting. Executive position desired. Address "M. A. 26," Engineering News, New York. 26-1t

Civil Engineers.

EXPERIENCED railroad (20 years) locating and constructing engineer (about completing 100 miles) wishes engagement as Division or Chief Engineer. Address "X 18," Engineering News, New York. 18-12t

GRADUATE CIVIL ENGINEER (30), as assistant engineer on construction or with consulting engineer. Have had charge of important work. Address "S. A. 18," Engineering News, New York. 18-12t

ENGINEER.—(28), 6 years' experience heavy railroad construction, 2 years in charge, good draftsman, A1 references. Address "B. 18," Engineering News, New York. 22-12t

GRADUATE CIVIL ENGINEER, eight years' experience on various classes of public works. First-class organizer and manager. Address "G. 23," Engineering News, New York. 23-4t

CIVIL ENGINEER, twenty years' experience railroad location, construction and maintenance, now employed desires change. Unquestionable references from past employers. Address "P. A. 23," Engineering News, New York. 23-12t

CHIEF ENGINEER railroad construction and mineral land development. Familiar with details and handling work of magnitude. Address "Z. B. 23," Engineering News, New York. 23-9t

CITY ENGINEER; salary under three thousand not considered. Permanency not essential. Address "B. B. 23," Engineering News, N. Y. 23-9t

ENGINEER, now employed, desires charge of railroad, location, evaluation; and construction; college engineering education, references. Address "X. B. 23," Engineering News, New York. 23-9t

CIVIL ENGINEER.—Technical education, 9 years' experience on railroads, electric roads, construction of power plants, bridges, docks, foundations (plain and reinforced concrete), the erection and inspection of steel and drafting (structural steel and general). Moderate salary. Address "Z. A. 24," Engineering News, New York. 24-3t

ENGINEER (27), desires position, 5 years experience with railroad on location, tunnels, tracks, general engineering and construction work; 2 years with contractor on heavy excavation, steel piling, sewer, concrete, dock and estimating work. References. Address "K. A. 24," Engineering News, New York. 24-4t

CIVIL ENGINEER, college man with six years' practical experience, four years in charge, is seeking position on heavy municipal or railroad construction; open to any fair offer. Address "F. B. 24," Engineering News, New York. 24-3t

GRADUATE CIVIL ENGINEER, 5 years' sanitary and hydraulic experience, design, estimates, calculations, construction, good draftsman and instrumentman, desires change. Address "O. 25," Engineering News, New York. 25-2t

ROAD MASTER OR SUPERVISOR of track seeks better position. Expert on switches and every phase of practical railroad work. Twenty years' experience in construction and maintenance. Best of reference. Address "H. 25," Engineering News, New York. 25-4t

UNIVERSITY GRADUATE, degree C. E., with four years' experience on construction work, worked up from transitman to executive position, desires change July 1. Address "E. 25," Engineering News, New York. 25-2t

CIVIL ENGINEER.—Wants position. Address "G. A. 25," Engineering News, New York. 25-6t

CIVIL ENGINEER, age 34, graduate, twelve years' experience on preliminary, location construction, also mining and canal work, at present employed on railroad work, wishes change for personal reasons. Address "E. B. 25," Engineering News, New York. 25-2t

CIVIL ENGINEER.—Rensselaer Polytechnic Institute graduate, wants permanent position with engineering and contracting company. Four years' experience in hydraulic concrete and structural work. A1 references. Address "S. A. 24," Engineering News, New York. 25-2t

LOCATING and constructing engineer, 15 years' experience under difficult conditions in United States and Mexico, desires party. Would take assistant engineership under chief engineer. Address "Z. 26," Engineering News, New York. 26-1t

GRADUATE C. E., experienced in concrete work, street railway and suburban development, wants position. Engineer in charge for a real estate firm preferred. Now employed by contracting engineer. Salary considered not less than $30. Address "L. 26," Engineering News, New York. 26-1t

CIVIL ENGINEER, technical graduate, with eight years' experience in bridge, railroad and construction company work, desires a change. A permanent position along commercial or executive lines preferred. Highest references. Address "M. 26," Engineering News, New York. 26-2t

RESIDENT ENGINEER, at present employed, be at liberty Aug. 1st, four years experience, heavy earth and rock work. References furnished. Address "X. 26," Engineering News, New York. 26-1t

GRADUATE CIVIL ENGINEER, experienced on precise land and title work, subdivision and development of property, desires responsible position. Address "R. A. 26," Engineering News, New York. 26-4t

EXPERT CIVIL ENGINEER, 10 years' experience in structural engineering, thoroughly familiar with design and construction of all kinds of reinforced concrete would change. Position requiring responsibility preferred. Address "R. C. 26," Engineering News, Chicago, Ill. 26-1t

YOUNG ENGINEER, with ten years' experience in topographical, electric railway and landscape work, desires permanent position in the East. Address "G. 26," Engineering News, New York.

CIVIL ENGINEER (27), graduate M. I. T., 3 years' experience on construction, reinforced concrete, heavy masonry, steel erection, etc., has just completed local and construction railroad in Tropics and is open for engagement. Excellent references. Address "D. B. 24," Engineering News, New York. 25-

CIVIL ENGINEER, age 32, technically educated, nine years' experience railroad location, construction and maintenance, desires change. Position of responsibility and hard work solicited. Address "D. 18," Engineering News, New York. 25-

CIVIL ENGINEER, extensive experience steam and electric railroad construction, land and title work, subdivision and development of property, desires position. Address "P. A. 26," Engineering News, New York. 26-

POSITION WANTED—Graduate engineer, fourteen years' experience on location and construction of steam and electric railroads and general engineering work. Good instrumentman, fair draftsman, and has served as engineer in charge of important works. Present location Pennsylvania. Address "K. A. 25," Engineering News, New York. 26-

Bridge and Structural Engineers.

EXPERT STRUCTURAL AND REINFORCED CONCRETE ENGINEER, whose time is not all taken up, will check plans, make designs and estimates of bridges, foundations, steel buildings, etc. Address "D. A. 25," Engineering News, New York. 25-12t

ENGINEER, regularly employed, wants extra work designing or detailing structural work. Address "D. A. 25," Engineering News, New York. 25-12t

STRUCTURAL ENGINEER and draftsman, 8 years' experience in detailing, designing and estimating structural steel of all kinds. Can take full charge. Best of references from present employer and others. Address "F. 26," Engineering News, New York. 26-1t

COLLEGE GRADUATE, with 6 years of wide experience in bridge detailing, designing and estimating, wishes to change location to the East. References. Address "Z. A. 26," Engineering News, New York. 26-2t

GRADUATE ENGINEER, with A 1 experience in bridge and structural work, covering drafting, estimating, designing, contracting, organization and operation of plant, and complete management, is open for engagement for anything in his line. Nothing but responsible position on high grade work considered. Best references. Address "B. A. 26," Engineering News, New York. 26-3t

Surveyors.

POSITION AS LEVELER wanted by I. C. S. student of civil engineering, who has almost completed the railroad engineering portion of his course; one year's experience as chainman, rodman and leveler on power plant and electric railway; location with big power company. Address V. C. RODDIN, North Fork, Cal. 18-12t

WANTED—Position as surveyor in charge; ripe experience; best equipment. Address "D. 21," Engineering News, New York. 21-6t

YOUNG MAN, with two years' experience and two years' training in U. of P., wants position on surveying corps after June 22, 1907. Address "S. 24," Engineering News, New York. 24-3t

WANTED—Position as transitman on municipal work by accurate, reliable young man; good, neat draftsman, with good theoretical knowledge of surveying and some experience running transit and level. Southern New England preferred. Address "E. 16," Engineering News, New York. 25-3t

COOPER UNION STUDENT, age 20, desires position as rodman or chainman, having had several months' experience with rod and chain. Can furnish good references. Address PH. SCHWARTZ, 169 Essex St., New York City. 26-1t

YOUNG MAN, has used transit and level, is neat draftsman and good computer, desires position. Address "A. 26," Engineering News, New York. 26-3t

TRANSITMAN (26), 4 years' experience, field and office, extensive surveys, topographic and heavy foundations and construction work; capable instrumentman; good computer and draftsman. Address "K. 26," Engineering News, New York. 26-1t

TRANSITMAN (27) desires position; 3 years' experience on accurate surveys and general engineering work. Fair draftsman. References. Address "M. B. 24," Engineering News, New York. 26-1t

WANTED—Position as topographic surveyor; 3 years' experience. Present job finished August 1. Address "X. A. 26," Engineering News, New York. 26-2t

POSITION WANTED.—By young man, to take charge of an engineer corps. Have had about 8 years' experience in general surveying, steam and electric railways, water-works and construction work. Address "A. A. 26," Engineering News, New York. 26-1t

Draftsmen.

CHIEF DRAFTSMAN or Testing Engineer, long experience in general machinery, hydraulic machinery, steam engines, air compressors, condensing apparatus. Address "O. 24," Engineering News, New York. 24-12t

DRAFTSMAN, competent designer, and reliable computer on mechanical and structural work, is open for engagement. Adress "D. B. 22," Engineering News, New York. 25-3t

DRAFTSMAN, 30 years, graduated in Germany, 5 years' experience, especially in hoisting and conveying machinery, 1 year shop practice, wants position. Address "F. B. 25," Engineering News, New York. 25-3t

DRAFTSMAN, graduate civil engineering; three years' experience all-around mechanical and four years of structural; three years of latter as checker. Permanent position desired with reinforced concrete firm where there is opportunity for both office and field work. Moderate starting salary, with increase according to ability. Address "P. 26," Engineering News, New York. 26-1t

WANTED.—Position as chief draftsman for a reliable structural concern. Technical training. Nine years' practical experience. Have had charge of structural drawing room for three years. Want to make a change. Can furnish best of reference. Address "D. 26," Engineering News, New York. 26-1t

WORK WANTED.—Designing, checking and detail steel work, for all kinds of buildings. Address "H. B. 25," Engineering News, New York. 26-1t

DESIGNING ENGINEER AND DRAFTSMAN. Eight years' experience as draftsman, designer and estimator in all kinds of steel, concrete and timber construction, including hydro-electric power plants, dams, headgates, mill buildings, coal handling towers, bridges, reinforced concrete structures, piers, foundations, retaining walls, etc. Best of references from present employer and others. Address "E. 26," Engineering News, New York. 26-1t

DRAFTSMAN (26). Technical training. Four years' experience, field and office topographic and construction work. Address "I. 26," Engineering News, New York. 26-1t

DRAFTSMAN.—Four years' experience in detailing bridge and structural work. College graduate; wants position to do designing. Address "L. A. 26," Engineering News. 26-1t

ESTIMATOR AND DRAFTSMAN, having wide experience taking off structural and ornamental quantities for all classes of buildings, also capable of designing same, seeks opening. Address "O. A. 26," Engineering News, New York. 26-2t

Superintendents, Misc., etc.

WANTED.—An opportunity to purchase an interest or partnership in an engineering firm by an engineer of experience. Address "R. 16," Engineering News, New York. 16-12t

GENERAL SUPERINTENDENT or executive engineer, sober and industrious, 18 years' experience; many classes general construction, all kinds excavating machines, hydraulic dredges, concrete plain and reinforced, masonry, tunnels, railway work, cofferdams and submerged work, sewers and water-works, plain and reinforced concrete reservoirs and structures, quarries. Design, build and operate plant required for execution large contracts; execute large contracts without constant coaching from home office; familiar modern methods, posted reliable cost-keeping, college education, civil engineering, Mem. Am. Soc. C. E., good address, tact and executive ability, modest salary and working interest preferred; present employed engineer and general superintendent; refer present and past employers; location immaterial. New York interview. Address "I. A. 21," Engineering News, New York. 21-12t

ENGINEER.—Ten years' experience in charge of contract work, including most difficult and complicated contracts of various classes. Graduate C. E. Assoc. M. Am. Soc. C. E.; $200 per month. Address "I. 23," Engineering News, New York. 23-4t

ASSISTANT SUPERINTENDENT, for general contract work, 8 years' experience on heavy construction. Good organizer and a hustler. Address "F. 23," Engineering News, New York. 23-4t

SUPT. OR ASST. SUPT.—Ten years' experience in heavy construction, sewers, tunnels, building construction, railroad work, shafts and heavy concrete work. Tunnel work a specialty; have five or six first-class tunnel foremen and drill runners available. Southern job preferable. Address "F. 21," Engineering News, New York. 21-8t

SUPERINTENDENT.—First-class man on earth and rock excavation and concrete, 10 years' experience on heavy construction. Good organizer. References. Address "H. 23," Engineering News, New York. 23-4t

WANTED.—Steady position as assistant superintendent on construction work; have twelve years' experience on concrete, rock and earth excavation; can furnish best of references. Address "D. A. 24," Engineering News, New York. 24-3t

ASSISTANT SUPERINTENDENT wishes change, technical graduate, 6 years' experience, $130. W. E. C., 6405 Parnell Ave., Chicago. 24-3t

EXPERIENCED INSPECTOR is open for position. Thoroughly familiar with all classes of mill, shop and field work. Address "K. 24," Engineering News, New York. 24-3t

HYDRAULIC ENGINEER, experienced in design, reports, construction and details. Now employed. Address "A. B. 23," Engineering News, New York. 23-9t

TECHNICAL GRADUATE, married, age 26, now assistant to master mechanic in mill employing 400 people, desires to make a change. Familiar with compilation of estimates and reports, electrical and mechanical power distribution, office and drafting-room practice and systems, and building construction and maintenance. Good correspondent. Salary, $1,500. Address "TECHNICAL," P. O. Box 733, New Haven, Conn. 25-5t

YOUNG MAN, age 27, desires position with contractor, as superintendent, assistant superintendent or instrumentman; six years' experience. Can give good references. Address "R. B. 18," Engineering News, New York. 25-2t

ENGINEER AND DRAFTSMAN.—Age 25, technical graduate; extensive experience in railroad and municipal engineering; superintendence and design of reinforced concrete, steel bridges, foundations, etc. First-class draftsman. Located in bridge department of large eastern city. Location preferred East or South. Al references. Adress "E. A. 22," Engineering News, New York. 25-2t

SUPERINTENDENT, familiar with foundation work, pneumatic, earth and rock excavation, underpinning. Can furnish best of references in every respect, and employed at present, but would like a change. Desires position where executive ability is required. Age 35, resident New York City. Address "S. 25," Engineering News, New York. 25-2t

FOREMAN, 11 years' experience in heavy construction sewer road work, heavy concrete excavation. All lines of construction a specialty. Best of references. Address GEORGE RICO, 947 3d Ave., Brooklyn, N. Y. 25-2t

MANAGER.—I am open for engagement by engineering, contracting or manufacturing company seeking a man with ability and energy whose salary will be gaged by results. Have had 20 years' experience from blacksmith helper to manager. On mechanical construction, graduate C. E. Address "R. 25," Engineering News, New York. 25-4t

I POSSESS THE SELLING FACULTY.—If you want a salesman, will come and talk with you so you may determine this for yourselves. Address "E. A. 25," Engineering News, New York. 25-2t

CONTRACTORS' SUPERINTENDENT, Civil Engineer, Estimator (34), railroads, building construction, power plants, sewerage and sewage disposal works, reinforced concrete specialty. Address "P. A. 25," Engineering News, New York. 25-2t

CHIEF ENGINEER of large reinforced concrete construction company open for an engagement. Considerable experience in the designing of reinforced concrete and steel structures of magnitude. Address "W. A. 25," Engineering News, New York. 25-2t

GENERAL FOREMAN desires position with large contracting firm on macadam road construction or grading; large experience, and thoroughly competent to take full charge of work; will go anywhere. Address "C. F.," Bayville, L. I., N. Y. 25-2t

SALESMAN with experience in structural iron work wishes position with contractor on salary and commission. Address "O 26," Engineering News, New York. 26-1t

TECHNICAL GRADUATE, 7 years' experience with well-known companies on bridge masonry, building construction and structural drafting for buildings, at present employed by government, seeks active work, preferably with contracting firm in Southwest or South. Address "R. 26," Engineering News, New York. 26-2t

HEATING ENGINEER.—Young man, with considerable experience, and in a position to command some business, desires connection with a live consulting engineer where he will have opportunities for expansion and progress in his work. Address "S. 26," Engineering News, New York. 25-2t

GENERAL MANAGER or general superintendent with large building firm. At present located as western manager. Desirous making change; satisfactory reason. Seventeen years' experience in all classes of building; good estimator, practical man, good executive and high-class superintendent. 35 years old. Address "H. 26," Engineering News, New York. 26-1t

YOUNG MAN (21) wishes position with engineering firm where he can work up. Have had some technical education and considerable field experience. Best references. Address "C. A. 26," Engineering News, New York. 26-2t

CONCRETE INSPECTOR seeks position; twenty years' experience in concrete, paving, duct laying, timekeeping, receiving material. Understand men and my work. DAVEY, 205 West 148th St., New York City. 26-1t

SUPERINTENDENT AND ENGINEER desires position. Twenty years' general experience. Especially familiar with concrete, stone and brick masonry, rock and soft ground tunneling, pneumatic caissons, steel and timber work. Just finished engagement as general superintendent on five million dollars' worth of work, including masonry, timber and tunnel work, employing nine hundred men Conversant with cost keeping, and can design and construct up-to-date plant for handling any work and operate same economically. Also can at all times secure, at short notice, competent foremen mechanics, etc., who can hustle work to completion. Address "S. A. 26," Engineering News, New York. 26-4t

GENERAL MANAGER for contracting firm; engineer and manager at present in charge construction of six large hydraulic works on Pacific Slope, dams, reservoirs, aqueducts, etc. Willing to consider proposition from good firm. Accustomed to design and operate plant and organize large labor forces on economic basis. Address "W. A.," Engineering News, New York. 26-2t

ROADMASTER or assistant engineer, technical graduate, age 26 years, with experience on construction and maintenance with large Western road, desires position at once. Address "W. B. 26," Engineering News, New York. 26-4t

A TECHNICAL MAN desires a position with an engineering-contracting concern in the East. Eight years' experience in engineering and construction of steam and electric roads. Business ability. Age 32. Address "L. B. 26," Engineering News, New York. 26-12t

A YOUNG MINING ENGINEER, with six months' practice in coal mining, and six months' experience in one of the largest assaying firms on the continent, desires a position as assayer. Speaks German, Polish and English. Address J. F. 7212, Rudolf Mosse. 26-1t

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See page 46, also Construction News page 234.

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WANTED.—An experienced man in the estimating department of a large structural and architectural iron working concern in New York City. Must have some experience in taking off quantities for structural work and must be absolutely competent in taking off quantities and making sketches, etc., of items called for in the architects' specifications for ornamental and finishing iron work. Permanent position and good salary for the right man. Address "P. 24," Engineering News, New York. 24-tf

WANTED.—Four first-class structural detailers and checkers; excellent opportunity for young man of experience and ability to advance. Work on coal and ore handling bridges. In writing give copy of references and full particulars of experience. Location Ohio. Address "B. 24," Engineering News, New York. 24-4t

WANTED.—An expert bridge and structural steel work foreman for Chicago shop. Must be experienced and successful manager of men. To the right man, a good salary will be paid. Address "P. 25," Engineering News, Chicago, Ill. 24-4t

WANTED.—Experienced Superintendent of Production. Give references and state salary expected. THE PNEUMELECTRIC MACHINE CO., Syracuse, N. Y. 25-3t

WANTED.—One or two engineers, college graduates out of school two or three years, to act as traveling sales engineers for well known reinforced concrete company. Prefer men having experience in sale of materials. Good opportunity for the right men. Address "M. 25," Engineering News, New York. 25-3t

ASSISTANT FOREMAN WANTED, for Trap Rock quarry in New Jersey; must be good quarryman, able to handle foreign help; state experience and salary wanted. Address "K. 25," Engineering News, New York. 25-4t

WANTED.—Several first-class draftsmen and checkers. Work along mechanical, structural and hydraulic lines. Location Western Pennsylvania. State age, experience, salary expected. Address "C. 25," Engineering News, New York. 25-4t

WANTED.—Person or persons willing to take interest in Bridge and Structural shops, located in the West. Profitable business. Capacity at present about 4,500 tons. Can be increased. Parties must be practical and capable of taking active part in management. Address "C. 18," Engineering News, New York. 18-6tcow

WANTED—Electrical Expert Aid, $7.04 per diem; First-class Electrical Draftsman, $5.04 per diem. A competitive examination will be held simultaneously at the Navy Yards, Brooklyn, N. Y.; Washington, D. C., and the Naval Training Station, North Chicago, Ill., July 22 and 23, 1907, for the above positions, and for the purpose of establishing an eligible register of first-class electrical draftsmen. For further information, address COMMANDANT OF THE YARD at which the applicant desires to be examined. 25-2t

WANTED—Municipal Engineer thoroughly familiar with sewer, paving and reinforced concrete construction, as assistant to City Engineer. Enclose references as to experience and character. Salary not to exceed $100 per month to start. E. H. SAWIN, City Engineer, Wichita, Kansas. 25-2t

WANTED—Experienced draftsman to detail and check structural work. Will pay good salary to thoroughly competent party. Old-established steel concern, offering opportunities for advancement. Location, Chicago. State experience, references, and salary expected. WORK, 1636 Monadnock Block, Chicago. 26-1t

WANTED—A large, old-established steel concern, location Chicago, seeks party competent as chief inspector fabricated structural and plate work. Must be thoroughly experienced and well recommended. Give full particulars as to education, experience, references, salary expected. INSPECTOR, 1639 Monadnock Block, Chicago. 26-1t

WANTED—Superintendent for reinforced concrete buildings in New England States. Only men of experience with good concerns in this line need apply. Address, giving age, experience and salary expected, "B. 26," Engineering News, New York. 26-2t

WANTED—By structural steel company, New York City, man capable of laying out work and running jobs. State age, experience, and salary expected. Address "C. 26," Engineering News, New York. 26-1t

WANTED—An operating superintendent for a thoroughly modern Portland cement plant. Please state experience, reference, salary expected, and when at liberty. KOSMOS PORTLAND CEMENT CO., Kosmosdale, Ky. 26-2t

OFFICE OF TREASURER OR SECRETARY of general contracting and engineering corporation, increasing capital from $200,000 to $300,000, with profitable business for two years or more right in hand, is open to active man of good business ability and unquestionable character who invests $50,000 or more. Able management; controlling attractive business; very safe, profitable investment; good position. Must act promptly. Address "AMCOANCO," Pittsburgh, Pa. 26-1t

WANTED—Position as manager of construction company doing heavy construction and reinforced concrete work. Guarantee results good promoter can put company on sound basis that needs money. Salary to start $4,000. Address "B. B. 26," Engineering News, New York. 26-3t

FOR ADDITIONAL "SITUATION OPEN" ADVERTISEMENTS

See page 46, also Construction News page 234.

NOTICE—The "WANT" Columns of Engineering News are for the special benefit of bona-fide employers or employees, or for those wanting partners, sales agents, etc. Advertisements from employment agencies, schools and like institutions must be inserted under Bureaus and Agencies, at the rate of $1.50 an inch, displayed, or five cents per word.

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WANTED.—Will pay 50c. for one copy of Engineering News of Feb. 28, 1878, and 10c. each for copies of Jan. 4, 1906. Cost of postage allowed. Address "A. R. T.," c/o Engineering News, 220 Broadway, New York. tf

WANTED by successful young engineer and contractor an energetic partner, engineer with business qualifications preferred. Must be a gentleman, and willing to do share of work. Reference and experience exchanged. Splendid opportunity for right man. Have on hand paying work due to the continued invitations to bid on high-class work. Desire to enlarge outfit. High standing in community. Work in South Atlantic States; headquarters in Virginia. Unless business is intended, do not waste time replying. Require investment of $5,000. Probable investors are invited to go over books and work, and will be furnished statement of standing upon sufficient evidence of good faith. Address "W. 26," Engineering News, New York. 25-3t

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4—10 × 16 or 9 × 14 Saddle Tank 36" gage locomotives; 75—3 and 4 yard 36" gage dump cars; 20—36" gage Flat Gondola Cars, about 20 feet long; lot of relaying rails; 4—100, 125 or 150 HP. Locomotive Type or Horizontal Return Tubular Boilers; 5—7½ × 12 and larger Double Cylinder Hoisters, single, double and triple drums; 2 locomotive cranes, different sizes; 2 stone crushing plants; lot of ½, ⅝ and ¾", also 2 and 2¼", STEEL Wire Rope; give full description and prices. "I. C. 24," care Engineering News, New York. 26-1t

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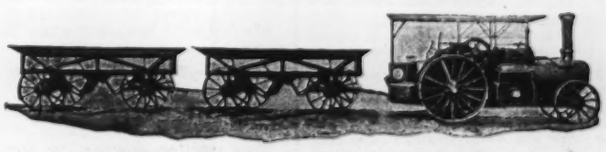

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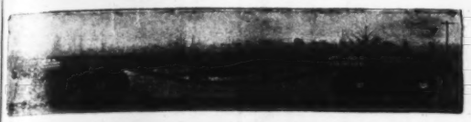

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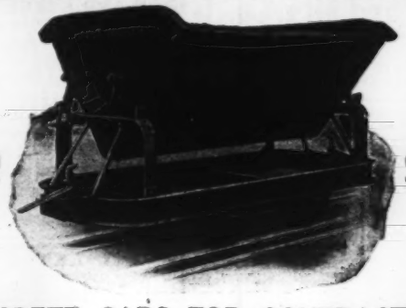

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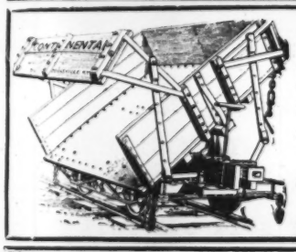

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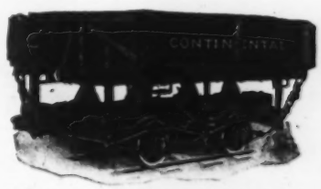

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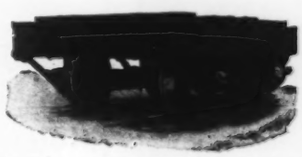

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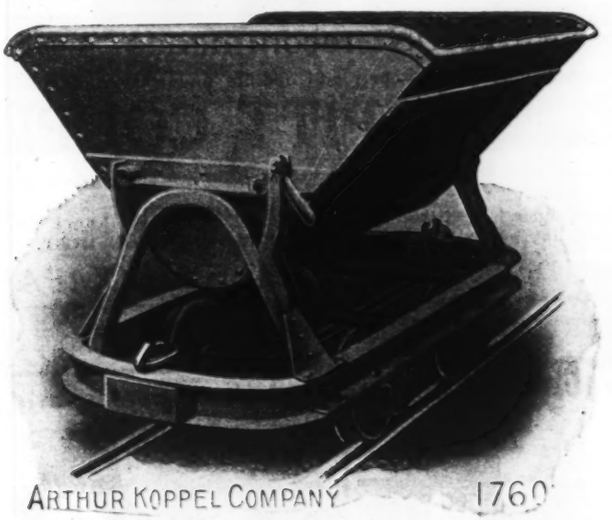

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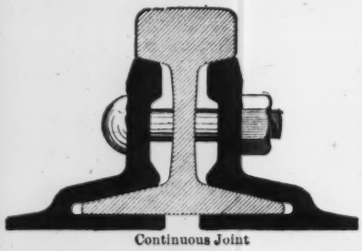

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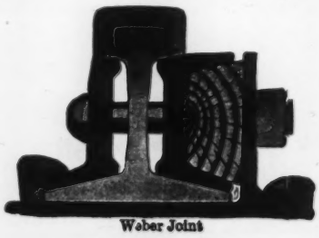

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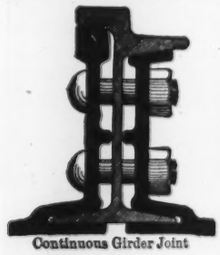

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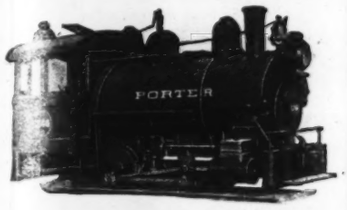

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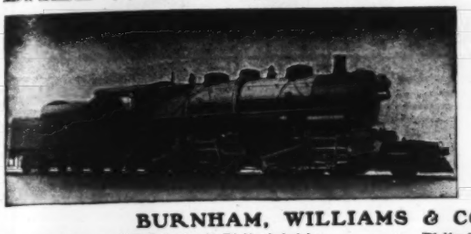

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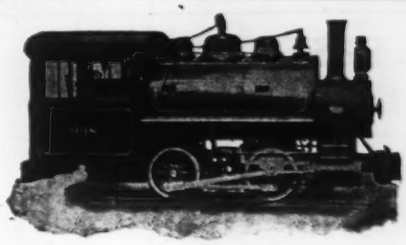

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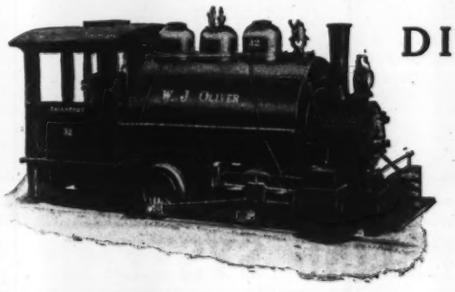

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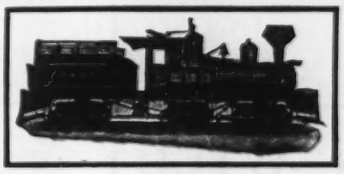

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is the most important feature of the car, because of the excessive wear it receives.

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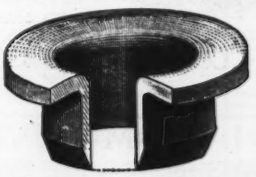

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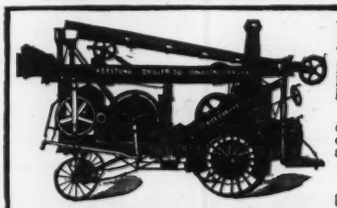

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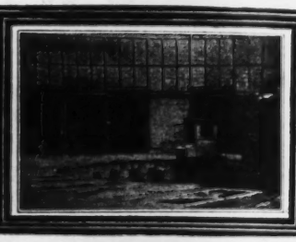

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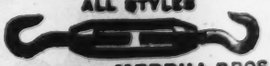

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Aluminum Wire and Cables (bare and insulated) for Electrical Conductors

Aluminum Company of America, Pittsburgh, Pa.
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HIGHWAY BRIDGES.

Department of the Interior of Porto Rico,
Bureau of Public Works,
Office of the Superintendent,
San Juan, P. R., May 28, 1907.

The Bureau of Public Works of the Department of the Interior of Porto Rico will receive at the Office of the Superintendent at San Juan, P. R., alternate sealed bids and plans for furnishing on a dock at San Juan, P. R., for furnishing and erecting in place, or for erecting only, five steel riveted through truss highway bridge spans, each 135' 0" long between centers of pins, for the Rio Grande de Loiza Bridge near Caguas, La Plata Bridge on the Bayamón-Comerío Road, and the Utuado Bridge near Utuado, until 10 A. M., July 20, 1907, when they will be publicly opened and read.

Profile maps of the sites, specifications and description of the work, may be seen and obtained in this Office.

The right is reserved to reject any or all bids.

By order of the Commissioner of the Interior.

J. J. JIMENEZ,
23-4t Supt. of Public Works.

BRIDGE.

New Orleans, La.

Pursuant to Ordinance No. 4551, N. C. S., sealed proposals will be received at the office of the Comptroller, in the City of New Orleans, until the hour of 1 P. M., Monday, July 15th, 1907, for the erection of a new bridge of the bascule or lift type to span Bayou St. John on the prolongation of the Axis of Esplanade Avenue, in accordance with plans and specifications on file in the office of the City Engineer.

Deposit of $1,500.00 with the City Treasurer, and his receipt enclosed with bid.

Bond in an amount equal to the contract price.

The City Engineer will furnish bidders with a blank form of proposal; no proposal will be considered unless submitted on such form.

Bilders must have paid their City license in order that their bids may be accepted.

The City reserves the right to reject any and all bids.

CHAS. R. KENNEDY,
Comptroller.
June 7th, 1907. 24-5t

U. S. ENGINEER OFFICE, Boston, Mass., May 29, 1907.—Sealed proposals for dredging ($3,006,000 worth) in Boston Harbor, Mass., will be received here until 12 M., June 29, 1907 and then publicly opened. Information on application. EDW. BURR, Maj. Engrs. 22-3t 26-1t

BOIL AND STRAIN THE WATER

That's your physician's advice when your system becomes limed up from using hard water. Apply the old doctor's advice in your power plant and prevent scale in the boilers. The Marion System does just that — brings the feed-water up to BOILING point by contacting it with the exhaust steam, and afterwards STRAINS it through two filter cloths.

We'd be glad to go into details with you. Tell you about the Packard Oil Separator, the Hollow Expansible Heating Trays, Inclined Deflector and Filter (SELF-CLEANING) and the Water Softening features with automatically controlled reagent introduction and new test apparatus.

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THE WYOMING SHOVEL WORKS, Wyoming, Pa.

BRIDGES.

Nashville, Tenn.

Sealed proposals will be received by the Cumberland River Bridge Committee of the Davidson County, Tennessee County Court, at its Room No. 48, Cole Building, in the City of Nashville, Tenn., until 12 o'clock noon, July 10th, as follows:

1st. For furnishing all materials for and the building of concrete piers for two highway bridges across the Cumberland River in Nashville, Tenn. Approximate yardage at each bridge, six thousand yards.

2. Furnishing all materials for and the building complete of reinforced concrete viaduct approaches, retaining walls, etc., for said bridges. Approximate yardage at Sparkman Street bridge, six thousand yards. Approximate yardage at Jefferson Street bridge, six thousand yards.

3d. Furnishing borrow pits and the filling of certain parts of the approaches to said bridges. Approximate yardage of filling at each bridge, 45,000 cubic yards.

Plans and specifications for the work will be open to inspection of bidders at the office of the Committee on and after June 15th, 1907.

A certified check for the sum of one thousand dollars ($1,000.00), payable to the order of the County Trustee, must accompany each bid, as a guarantee that the bidder will enter into a contract to do the work as specified, and to furnish the required bond, in case the work is awarded to him.

The right is reserved by the Committee to let all the work to one bidder or to let each item as above for each bridge to separate bidders.

The right is also reserved by the Committee to reject any or all bids received.

JAS. K. RAINS, Chairman.
HOWARD M. JONES, Engineer. 23-5t

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 17, 1907.—Sealed proposals will be received at this office until 3 o'clock P. M. on the 24th day of July, 1907, and then opened, for the construction complete of the extension to the U. S. Post Office, at Aurora, Illinois, in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Postmaster at Aurora, Illinois, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 23-2t

STANDARDS OF MATERIALS

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DR. CHAS. F. McKENNA

NEW YORK CITY

Specifications, Inspection, Technology of Production

RUBBLE CONCRETE DAM.

Livermore, Colo.

The North Poudre Irrigation Company, of Fort Collins, Colorado, will receive sealed bids until ten o'clock A. M. of the 8th day of July, 1907, for the construction of a rubble concrete dam across the North Fork of Cache La Poudre River, near Livermore, Larimer County, Colorado; maximum height about 80 feet, and length about 329 feet.

This work comprises approximately the following quantities:

Rubble concrete construction, 17,500 cu. yds.

Excavation earth and loose rock, 5,000 cu. yds.

Excavation solid rock, 500 cu. yds.

The cement used in this work will be furnished by the North Poudre Irrigation Company. The aggregate for the concrete can be obtained at the dam site. Plans and specifications for the above dam will be on file at the office of the Secretary of the above company at Fort Collins on and after June 7, 1907.

A certified check made payable unconditionally to the order of the Treasurer of the North Poudre Irrigation Company for an amount equal to five per cent. of the bid must accompany each bid.

The right to reject any or all bids is reserved.

M. E. KAUFMAN,
Secretary.

S. G. SWIGART,
Chief Engineer. 23-4t

U. S. ENGINEER OFFICE, Mobile, Ala., June 5, 1907.—Sealed proposals for construction of sea wall at Fort Morgan, Ala., will be received at this office until 11 o'clock A. M., July 12, 1907, and then publicly opened. Information on application. H. JERVEY, Major, Engineers. 23-4t

SEALED PROPOSALS in duplicate, endorsed "Proposals for Wharf," will be received at the Bureau of Equipment, Navy Department, Washington, D. C., until 11 o'clock A. M., Aug. 20, 1907, and then and there publicly opened, for constructing a wharf and a trestle and coal bunker on the wharf at the U. S. Naval Coal Depot, San Diego, California. Plans and specifications may be obtained on application to the Bureau of Equipment. WM. S. COWLES, Chief of Bureau. 13th June, 1907. 25-2t

GARBAGE DISPOSAL.

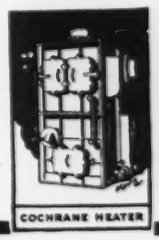
Youngstown, Ohio.

The Board of Health of the City of Youngstown, Ohio, will receive sealed bids at its office until twelve o'clock noon, June 29th, 1907, for the collection, removal and disposal of garbage within said city for a period of five years, in accordance with specifications on file in the office of the Board of Health and the ordinances of said city relating thereto, copies of which will be furnished to bidders upon application.

Each bidder shall state the lowest price for which he will collect, remove and dispose garbage in quantities of one hundred pounds or less, in quantities of more than one hundred pounds and less than two hundred pounds, and in quantities two hundred pounds and over. The price bid shall be the maximum charge which the contractor may make for said work. It being understood that the said work shall be done at the expense of persons responsible for the existence of garbage and not at the expense of the said city. Each bid shall contain the full name of every person interested therein and shall be accompanied by a good and sufficient bond or certified check, in the sum of Two Thousand ($2,000.00) Dollars, conditioned that the bidder will within five days after being notified that the contract has been awarded to him, enter into the contract and furnish a bond with sufficient sureties, in the sum of Twenty Thousand ($20,000.00) Dollars for its faithful performance. Said Board of Health reserves the right to reject any or all bids.

THE BOARD OF HEALTH,
City of Youngstown, Ohio.
22-5t By Clate A. Smith, Secy.

U. S. ENGINEER OFFICE, Newport, R. I., June 5, 1907.—Sealed proposals for dredging in New Bedford and Fairhaven Harbors, Mass., will be received here until 11 A. M., July 6, 1907, and then publicly opened. Information furnished on application. J. H. WILLARD, Lt. Col., Engrs. 23-4t



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What Is the Temperature of Your Boiler Feed Water?

If water enters the boiler below 200° F., you have a good opportunity to make money, for, if there is exhaust steam available about your plant, it can be used for heating the feed water to 208° or 210° F. Every 9° added results in an actual decrease of 1% in coal bills; it results in an almost equal decrease in water bills, it results in a great, although variable, decrease in boiler cleaning and repair bills, that is, providing the heating is done in a COCHRANE OPEN FEED WATER HEATER.

Some people tell us they are applying every pinch of exhaust steam to heating the feed water and still are getting only 180° F. or so, but when we investigate we often find that they are using closed heaters, and as a closed heater wastes all the steam condensed in heating the water, they are losing about one-seventh of the total heat and are also throwing away pure, condensed water equal to one-seventh of the total boiler supply. Besides this, if the closed heaters are not large enough, or have been installed for some time so that their heating surfaces are coated with oil on one side and scale on the other, the waste of heat may be much greater. As closed heaters are under full boiler pressure and are subject to great strains from temperature changes, they often leak, in which case much more water may be wasted than above stated.

In many cases it will pay to throw out the closed heaters and put in COCHRANE OPEN HEATERS, and it will always pay to put in COCHRANE HEATERS if there is exhaust steam available for heating the feed water. Sometimes it will pay even if there is no exhaust steam, since heating the feed water in a COCHRANE HEATER purifies it and thereby reduces the expense of cleaning and repairing the boilers.

Send for our Catalogue 41-H.

Harrison Safety Boiler Works
3186 North 17th Street Philadelphia, Pa.

For other Proposal Advertisements see pages 55, 56, 57, 58, 60, 61, 62, of Advertisements, and Construction News page 234.

Buckeye Traction Ditcher

Passes over the work but once, cutting to a perfect grade if so desired. Six days' test before asking for settlement to responsible parties. Write us for Catalog B, also for reprint article giving the amount of work Ditcher will do in one day of ten hours, and cost of operating.

READ THE FOLLOWING TESTIMONIAL OF THE HARRISON CONSTRUCTION CO. NEW JERSEY

20"x5½' Machine.
15"x5½' Machine. Newark, N. J., Nov. 19th, 1906.

The Buckeye Traction Ditcher Co., Findlay, O.

Gentlemen:—In reply to your favor of the 16th inst., asking how we like the Ditching Machines purchased from you in April, 1906, would say that we have just completed contract for thirty-eight miles of 10" steel pipe between Plainfield and Trenton, N. J., and we have done about 95 per cent. of the digging with these two machines. We find that they are all that you claim for them, and in fact have done considerable digging in shale rock with the 20"x5½' Contractors' Machine, a kind of digging that it was thought impossible to dig without blasting. Our best day's work with the 15½"x5½' Drainage Machine was 2,300 lin. ft. 4' deep.

We would be pleased to have you refer any one desirous of purchasing one of your machines to us, and think that our experience in the matter would be of considerable help to them. Very truly yours,

The Harrison Construction Co.,
H. L. Harrison, Pres.

THE BUCKEYE TRACTION DITCHER COMPANY
FINDLAY, OHIO

ABSOLUTELY THE ONLY MACHINE ADAPTED FOR DIGGING ALL KINDS OF TRENCHES

The Chicago Sewer Excavator

Is at the very height of twentieth century achievement in this line of construction.

Reduces the cost on many kinds of work to one-tenth of the cost of manual labor.

We have many records of from 400 to 1,200 cubic yards excavated in 10 hours.

We offer a certain money making proposition on a basis within easy reach of the responsible contractor.

Write for full information.

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Water Filters

Pressure and Gravity Systems for all Purposes

MUNICIPAL PLANTS A SPECIALTY

ROBERTS MANUFACTURING COMPANY
PHILADELPHIA, PA.

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Manufacturers of Gravity Filters, Pressure Filters, Water Softening

THE LYNN FILTER SYSTEMS
For Office Buildings, Factories and Manufacturing Plants
THE LYNN FILTER MFG. CO., Cincinnati, Ohio

PITTSBURGH-FILTER MANUFACTURING CO., Pittsburgh Pa.
Contractors for Municipal and Industrial Filters, Water Softeners and Sewage Disposal Plants

PUMPING MACHINERY.

Columbus, O.

Sealed proposals for furnishing the labor and material for the pumping machinery for the East Side Sewage Pumping Station for the City of Columbus, Ohio, will be received by the Board of Public Service until 12 o'clock noon (standard time) of July 10, 1907, in accordance with plans and specifications on file in the office of said Board and in the custody of Henry Maetzel, Chief Engineer, Department of Public Service.

The work includes the furnishing and erecting of two units for pumping sewage, each unit consisting of a horizontal centrifugal pump chain-driven by a horizontal gas engine, and having a maximum capacity of 2,900,000 gallons per 24 hours against a head of 63 feet, together with all piping and appurtenances, including a 20-inch Venturi meter.

Each proposal must be accompanied by a proposal bond or certified check for an amount equal to at least 10 per cent. of the bid. A bond for 50 per cent. of the amount of the contract will be required of the successful bidder.

Copies of the specifications and a plan showing the general arrangement of the machinery in the pumping station may be obtained at the office of the Chief Engineer on and after June 17, 1907.

BY ORDER OF THE BOARD OF PUBLIC SERVICE.

25-3t E. F. McGUIRE, Secretary.

SANITARY SEWERS.

Lebanon, Ohio.

The Council of the Village of Lebanon, Ohio, will receive bids for two sanitary sewers, one about 3,400 feet long and of an average depth of about 10.9 feet; and one about 6,400 feet long, and of an average depth of about 10.3 feet, up to 12 M., July 1, 1907.

Plans, profiles, specifications and estimates on file in the office of the Clerk of said Village. Blanks will be furnished on application.

25-2t M. E. GUSTIN, Clerk.

U. S. ENGINEER OFFICE, Cincinnati, O., May 29, 1907.—Sealed proposals for constructing dam of concrete, etc., at head of Marietta Island, Ohio River, will be received here until 12 M., June 29, 1907, and then publicly opened. Information on application. WM. T. ROSSELL, Lt. Col., Engrs. 23-4t

WATER-WORKS.

Passaic, N. J.

Proposals for furnishing, excavating the trenches for, and laying water pipes, etc.

By direction of the City Council of the City of Passaic, proposals are hereby invited for:

First—Distributing, laying, etc., about thirty-seven (37) miles of six (6) inch to twenty (20) inch pipes, hydrants, etc., the pipes, hydrants, gate valves and specials to be supplied by the City of Passaic, and

Second—Furnishing and delivering all pipes, hydrants, gate valves and specials.

Plans and specifications may be seen and forms of proposals and contract may be obtained at the City Clerk's office or at the City Surveyor's office.

Proposals must be sealed and addressed to the Committee on Water Supply, in care of the City Clerk.

Bidders will be required to give bonds to the amount of their bids.

Each proposal must be accompanied by a certified check for $500.00 and $1,000.00 respectively, the checks of the unsuccessful bidders to be returned at once and the check of the successful bidder to be returned as soon as he has executed the proper bond and it has been accepted by the City. In case the party receiving the award fails to furnish the required bond and execute the contract within ten days therefrom his certified check will be forfeited to the City.

Work to be completed on or before September 1st, 1908.

The City Council reserves the right to reject any or all bids, and all bids must be submitted on Friday evening, June 28th, 1907, at 8 o'clock.

GEORGE K. ROSE,
JOSEPH SPITZ,
HERMAN FRIEND,
Committee on Water Supply.

Dated Passaic, N. J., May 13th, 1907. 20-7t

U. S. ENGINEER OFFICE, Buffalo, N. Y., June 1, 1907.—Sealed proposals for excavation at Ogdensburg Harbor, N. Y., will be received here until 11 A. M., July 2, 1907, and then opened. Information on application. H. M. ADAMS, Col., Engrs. 23-4t

U. S. ENGINEER OFFICE, Charleston, S. C., June 20, 1907.—Sealed proposals for dredging in Winyah Bay, S. C., will be received here until noon, July 20, 1907, and then publicly opened. Information furnished on application. G. P. HOWELL, Capt., Engrs. 26-4t

CONCRETE WALLS AND ROCK EXCAVATION.

Office Board of Public Works, Grand Rapids, Mich., June 22d, 1907.

Sealed proposals will be received at the office of the Board until Thursday, July 18th, 1907, at 8 P. M., for constructing 4,000 cubic yards concrete walls, excavating 18,000 cubic yards rock and 8,000 cubic yards earth, in connection with flood protection work at Grand Rapids, Michigan, according to plans and specifications on file at the office of the City Engineer.

The Board reserves the right to reject any or all bids.

Each bidder shall deposit with his proposal a certified check or certificate of deposit payable to the order of CHAS. M. WILSON, President, in the sum of 5 per cent. of his proposal, but not less than $50.00, to be forfeited to the City of Grand Rapids in case he shall fail to enter into contract, in accordance with his proposal, should his proposal be accepted by the Board of Public Works.

All proposals must be made upon blanks that will be furnished upon application at the office of the City Engineer. By order of the Board.

CHAS. M. WILSON, President.
SAMUEL A. FRESHNEY,
Secretary and General Manager.
L. W. ANDERSON,
City Engineer. 26-2t

OFFICE, COMMISSIONERS, District of Columbia, Washington, June 17, 1907.—Sealed proposals will be received at this office until 12 o'clock, noon, Monday, July 8, 1907, for the construction of sewers in the District of Columbia. Forms, specifications and necessary information may be obtained at Room 43, District Building, Washington, D. C. HENRY B. F. MACFARLAND, HENRY L. WEST, JAY J. MORROW, Commissioners, D. C. 26-2t

COUNTY ROAD.

READVERTISEMENT.

Salem, N. J.

Sealed proposals will be received by the Road Committee of the Board of Chosen Freeholders, of the County of Salem, on Monday, July 8th, 1907, at 8 o'clock P. M., at the Court-House, Salem, N. J., for grading and placing oyster shell or gravel surface on the Quinton Road (2.65 miles), in the Township of Quinton, and the City of Salem, Salem County, N. J. Specifications may be obtained and plans and profiles examined at the office of Howard B. Keasbey, Mecum Building, Salem, N. J., and also at the office of the State Commissioner of Public Roads, State House, Trenton, N. J. A certified check in the sum of $1,000, made payable to the order of the Director of the Board of Chosen Freeholders of Salem County, N. J., must accompany each bid, as a guarantee that the bidder will enter into a contract should the work be awarded to him. The right to reject any or all bids is reserved.

J. F. AYERS,
26-1t Director.

RESERVOIR.

Titus Hill, N. Y.

Proposals will be received by the American Pipe Mfg. Co., Fidelity Bldg., Philadelphia, Pa., up to July 1st, 1907, for the construction of a ten-million gallon distributing reservoir on the Charles Sickman farm, located one mile east of Titus Hill Station, ten miles from Buffalo, N. Y., on the Buffalo, Rochester & Pittsburgh Railroad, in East Hamburg Town, Erie Co., N. Y.

Plans and specifications may be had by application to this office, if satisfactory reference is furnished.

THE AMERICAN PIPE MFG. CO.,
J. W. Ledoux, Chief Engineer.
26-1t 112 No. Broad St., Philadelphia.

PATENTS TRADE MARKS

MACDONALD & MACDONALD
ATTORNEYS AND COUNSELORS IN PATENT CAUSES
Solicitors of Patents
AMERICAN SURETY BUILDING 100 BROADWAY, NEW YORK

For other Proposal Advertisements see pages 55, 56, 57, 58, 60, 61, 62, of Advertisements, and Construction News page 234.

American Sewer Pipe Co.

PITTSBURG, PA.

Largest Manufacturers of Sewer Pipe in the World

Sewer Pipe
Fire Clay Stove or Chimney Pipe
Fire Clay Flue Lining
Chimney Tops
Wall Coping
Building Blocks
Vitrified Paving Brick and Blocks
Roofing Tile
Fire Brick
Fire Clay

SWAMP AND ARID LANDS RECLAIMED BY A NEW METHOD

The Austin Drainage Excavator

Constructs a ditch at a single operation perfectly true to grade, of practically any desired depth, width of bottom or width of top, and slopes the sides to any angle.

It shaves out the ditch from the virgin strata of the earth, leaving the banks as firm as nature made them.

Wide *berms* are produced, effectually preventing the waste banks from being returned to the ditch through the action of frost or erosion.

It produces a ditch which *keeps* its shape and becomes a *permanent* waterway.

Write for Catalogue No. C.

F. C. AUSTIN DRAINAGE EXCAVATOR COMPANY

New York Office, 90 West St. General Offices, Railway Exchange, Chicago, U. S. A.

IF WE COULD CENTER YOUR ATTENTION UPON THE

BLAW STEEL CENTER

YOU WOULD NEVER HESITATE TO CENTER YOUR SEWERS WITH OUR PRODUCT

7 foot 6 inch Half Round Blaw Collapsible Steel Center, with Outside Shields, used by Coryell Construction Co., Williamsport, Pa.

No Strikes No Skilled Labor No Worry

PATENTED WRITE FOR OUR NEW CATALOG LEASED

Blaw Collapsible Steel Centering Co.

Westinghouse Building, Pittsburgh, Pa.

CAST-IRON FORCE MAINS.

Columbus, O.

Sealed proposals for furnishing the labor and material for laying cast-iron force mains for the City of Columbus, Ohio, will be received by the Board of Public Service at 12 o'clock noon (standard time) of July 10, 1907, in accordance with plans and specifications on file in the office of said Board and in the custody of Henry Maetzel, Chief Engineer, Department of Public Service.

The work consists principally of furnishing and laying about 9,800 ft. of 36-inch, 700 ft. of 24-inch and 700 ft. of 20-inch cast-iron pipe, together with all valves, blow-offs and other appurtenances, and the improvement and macadamizing of a road a distance of about 4,600 ft. The principal quantities of work are as follows:

Excavation: 18,100 cu. yds.
Embankment: 12,200 cu. yds.
Macadam: 2,200 cu. yds.
Brick and concrete masonry: 495 cu. yds.
Cast-iron pipe and special castings: 2,554 tons.
Gate valves, 3-in. to 36-in.: 26.
Miscellaneous iron and steel: 21,000 lbs.

Each proposal must be accompanied by a proposal bond or certified check for an amount equal to at least 10 per cent. of the bid. A bond for 50 per cent. of the amount of the contract will be required of the successful bidder.

Copies of the specifications can be obtained from, and copies of the plans may be seen at, the office of the Chief Engineer on and after June 17, 1907.

BY ORDER OF THE BOARD OF PUBLIC SERVICE.

25-3t E. F. McGUIRE, Secretary.

OFFICE OF THE COMMISSIONERS, D. C., Washington, D. C., June 10, 1907.—Sealed proposals will be received at this office until 12 o'clock noon, Saturday, June 29, 1907, for grading certain streets and avenues, aggregating about 58,000 cubic yards of grading. Blank forms of proposal, specifications, and all necessary information will be furnished on application to the office of the Engineer Commissioner, D. C. H. B. F. MACFARLAND, HENRY L. WEST, JAY J. MORROW, Commissioners, D. C. 25-2t

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SEALED PROPOSALS will be received at the office of the Light-House Engineer, Philadelphia, Pa., until 11 o'clock A. M., July 2, 1907, and then opened, for erecting a light-house, barn, oil-house, etc., at Listons Range Front Light-Station, Delaware, in accordance with specifications, copies of which, with blank proposals and other information, may be had upon application to the Light-House Engineer, Philadelphia, Pa. 25-2t

DRAINING DITCHES, EXCAVATION AND DREDGING.

READVERTISEMENT.

Time of Completion Extended to June 1, 1909.

Albany, N. Y.

Sealed proposals will be received by the State Water Supply Commission at its office, No. 23 South Pearl St., Albany, N. Y., on July 12, 1907, at 12 o'clock noon, for straightening, deepening and improving Canaseraga Creek, Kishaqua Creek, and other ditches in Livingston County, N. Y.

The work includes about 677,100 cubic yards of earth excavation; 10,200 cubic yards of earth filling and embankment; clearing and grubbing; 15,000 lineal feet of round timber; 89,300 feet of sawed timber; 400 piles; 1,690 cubic yards of concrete; 358,000 pounds structural steel for bridges, and 3,800 lineal feet of pipe railing.

Specifications, bidding sheets and form of contract may be obtained on application to the Secretary of the State Water Supply Commission at his office, 23 South Pearl St., Albany, N. Y., or from the resident engineer, Walter McCulloh, at Dansville, N. Y., or from the Consulting Engineer, Myron S. Falk, at 60 Wall St., N. Y.

Proposals will be received both for the entire work, or for any one of the nine sections, into which the work has been divided.

The right is reserved to reject any or all bids.

Bids must be made in strict accordance with the Instructions for Bidders, attached to the proposal books.

HENRY H. PERSONS, President.

JOHN C. GRAVES, Secretary. 26-2t

HIGHWAY BRIDGE.

Laurel Springs, N. J.

Bids are invited for building a new highway bridge over Laurel Mills Lake, at Laurel Springs, Camden County, N. J. Bids will be received and opened at the Freeholders' Room in Court House, Camden, N. J., on Monday, July 8th, 1907, at 11 A. M.

Copies of plans and specifications will be mailed to any address on application to Fred. W. George, Clerk of the Board of Chosen Freeholders, Court House, Camden, N. J.

Dated, Camden, N. J., June 21, 1907.

GEO. W. WHYTE, Chairman.

J. J. ALBERTSON, Co. Engr. 26-1t

BRIDGES.

OFFICE OF THE CLERK OF THE TOWN OF NORTH HEMPSTEAD, NASSAU COUNTY, NEW YORK.

Notice is hereby given that sealed bids for the construction of two steel and concrete bridges at Plandome Mills, near Manhasset, in the town of North Hempstead, Nassau County, New York, in accordance with plans and specifications prepared by J. D. C. Mackay, engineer, will be received and publicly opened by the Town Board and the Commissioners of Highways of the said town, at the Town Clerk's office, Roslyn, in said town, on Tuesday, July 2, 1907, at 3.30 o'clock in the afternoon.

All bids must be enclosed in plain sealed envelopes. Each bid must be accompanied by a certified check or cash to the amount of ten per cent. of the bid. The certified checks of unsuccessful bidders will be returned upon the acceptance of any bid; that of the successful bidder will be returned upon the signing of the contract and the filing of a satisfactory bond.

Plans and specifications may be seen at the Town Clerk's office, Roslyn, N. Y.; and at the office of the Engineer, J. D. C. Mackay, Port Washington, N. Y.

The right is reserved to reject any or all bids not deemed to the best interests of the town.

MONROE S. WOOD,
As Clerk of the Town of North Hempstead.
Dated, Roslyn, June 19, 1907. 25-2t

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 17, 1907.—Sealed proposals will be received at this office until 3 o'clock P. M. on the 11th day of July, 1907, and then opened, for an electric dumbwaiter in the U. S. Post Office, Court House, etc., at Chicago, Illinois, in accordance with the specification, copies of which may be obtained at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 25-2t

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U. S. ENGINEER OFFICE, Jones Building, Detroit, Mich., June 3, 1907.—Sealed proposals for dredging at Section 4, Plan B, Detroit River, will be received at this office until 3 P. M., July 8, 1907, and then publicly opened. Information furnished on application. CHAS. E. L. B. DAVIS, Col., Engrs. 23-4t

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U. S. ENGINEER OFFICE, Savannah, Ga., June 1, 1907.—Sealed proposals for dredging in harbor at Fernandina, Fla., will be received at this office until 12 noon (Eastern Standard Time), July 1, 1907, and then publicly opened. Information furnished on application. DAN C. KINGMAN, Lieut. Col., Corps of Engineers, U. S. Army. 23-4t

PAVING, SEWERING, CURBING, ETC.

Johnson City, Tenn.

Sealed proposals will be received by the undersigned until 12 o'clock noon, July 4th, 1907, for the paving of parts of Main, Market, Roan, Spring, Tipton and Buffalo Streets, with vitrified brick, bitulithic Hassam or asphalt; also, all necessary curbing, guttering and sidewalks of concrete or equally as good material; for about 5,800 feet of 8-in. lateral sewers, and for about 5,000 feet of trunk sewers, 18 to 24-in. tile or concrete. All according to plans and specifications prepared by the City Engineer. City reserves the right of paying in cash or in bonds. Certified check or approved bond, in the sum of 10 per cent. of amount of bid, must accompany all bids. The city reserves the right to reject any and all bids. Bids will be opened by the Board at 7.30 P. M., July 5th. Plans and specifications can be had after June 10th, from the undersigned.

E. E. ELLSWORTH, Recorder,
26-1t Johnson City, Tenn.

U. S. ENGINEER OFFICE, 812 St. Paul St., Baltimore, Md., May 31, 1907.—Sealed proposals for dredging in Patapsco River and Chesapeake Bay will be received at this office until 1 o'clock P. M., July 1, 1907, and then publicly opened. Information furnished on application. R. L. HOXIE, Lt. Col., Engrs. 23-4t

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FORT HANCOCK, N. J., June 1, 1907.—Sealed proposals for installing a filtration plant at Fort Hancock, N. J., will be received here until 12 M., July 1, 1907. Information furnished on application. U. S. reserves right to reject any or all proposals. Proposals should be marked "Proposals for Filtration Plant," addressed WM. PATERSON, Constructing Q. M. 23-4t

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FORT HANCOCK, N. J., June 1, 1907.—Sealed proposals for constructing a reinforced concrete sea wall at Fort Hancock, N. J., will be received here until 12 M., July 1, 1907. Information furnished on application. U. S. reserves right to reject any or all proposals. Proposals should be marked "Proposals for Sea Wall," addressed WM. PATERSON, Constructing Q. M. 23-4t

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WEST POINT, N. Y., June 25, 1907.—Sealed proposals, in triplicate, will be received here until 12 o'clock, noon, July 16, 1907, for furnishing and installing Steam Piping for Power House and Distributing System, as per drawings and specifications in this office. The United States reserves the right to accept or reject any or all proposals, or any part thereof. Forms for proposals furnished upon application. Address QUARTERMASTER, West Point, N. Y. 26-1t, 2-1t

For other Proposal Advertisements see pages 55, 56, 57, 58, 60, 61, 62, of Advertisements, and Construction News page 234.

FOR MAIN LINE WORK

Where Quick Action and Long Hauls are Necessary

The Twelve Yard Double Truck Car

is beyond comparison with any other equipment on the market

Economically operated by hand, or if desired can be equipped with air dump, so that the beds can be dumped and righted from the engine. M. C. B. Couplers. Air Brake when specified.

The smaller Western cars—1¼ and 1½ yard on 2-foot gauge, 3 and 4 yard on 3-foot gauge and 5 and 6 yard on standard gauge—are universally recognized as MONEY MAKERS and MONEY SAVERS.

Elevating Graders, Dump Wagons, Spreaders Cars, Wheeled and Drag Scrapers, Grading Plows, Rock Crushers, Road Machines and Buck Scrapers.

WESTERN WHEELED SCRAPER CO., AURORA, ILL. Earth and Stone Handling Machinery

HARBISON-WALKER REFRACTORIES CO.

PITTSBURGH, PA.

Manufacturers of Highest Grade Refractories.

Importers of Chrome Ore.

Sole Agents for Carl Spaeter Magnesite.

Fire Clay, Silica, Magnesia, Chrome

BRICK

Rotary Cement Kiln Linings
Boiler Settings—Stoker Arches
Rolling Mill Furnaces
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Locomotive Tile
Brick and Shapes for Gas Plants
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7,500 Regular Customers. Write for Booklet E. 1,200,000 Daily Capacity.

HIGH-GRADE FIRE BRICK

A good article is worth its price—Our No. 1 are No. 1.
Recollections of **quality** remain long after matter of **price** is forgotten.

HENRY MAURER & SON, 422 East 23d St., New York

GRAVEL ROAD.

Cape May Co., N. J.

Sealed proposals will be received by the Board of Chosen Freeholders of Cape May County, New Jersey, until twelve o'clock noon of the day of its meeting, on the eighth (8th) day of July, Nineteen Hundred and Seven (1907) at Cape May Court House, New Jersey, for the construction of a State and County Road, from the western terminus of the Ocean City Turnpike at Marmora, to the bridge over Cedar Swamp Creek, a distance of three and four hundred fifty-five thousandths (3.455) miles, and known as "Tuckahoe Road."

Said road to be constructed according to plans and specifications, which may be seen at the office of Hon. E. C. Hutchinson, State Commissioner of Public Roads, Trenton, N. J.; at the residence of A. B. Smith, Director, Beesleys Point; J. P. Fox and W. S. Johnson, Ocean City; C. P. Vanaman, Dias Creek; J. D. Ludlam, South Dennis; Daniel Schellenger, Erma; Henry S. Rutherford and John Bennett, Cape May City, or at the office of the Engineer at Ocean City, N. J.

On the day and date first mentioned, all proposals received for said work will be immediately opened and publicly read by the Board of Chosen Freeholders of Cape May County, New Jersey, the said Board reserving the right to reject any or all bids.

Each bid must be accompanied by a certified check to the amount of One Thousand Dollars ($1,000), drawn payable to the order of Anthony B. Smith, Director of the Board of Chosen Freeholders of Cape May County, New Jersey.

The successful bidder will be required to execute, within ten days after contract has been awarded to him, a bond in such sum and with such security as shall be approved by the Board of Chosen Freeholders; said bond shall be in a sum not less than the estimated cost of the road when completed.

Each bidder will be required to submit to the State Commissioner of Public Roads, Hon. E. C. Hutchinson, Trenton, N. J., and to the Engineer, prior to the time of submitting bid for construction, a sample of each class of gravel he proposes to use in the construction of this road.

All proposals must be on the regular "Proposal" form provided for the purpose; sealed and plainly marked on the envelope enclosing them "Proposal for Tuckahoe Road."

By order of "Board of Freeholders."

ANTHONY B. SMITH,
Director.

R. FENDALL SMITH,
Engineer. 25-3t

STEEL RAILWAY BRIDGES AND HAND-RAILING FOR SUBWAY.

Toronto, Ont.

Tenders will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, up to noon on Tuesday, July 16th, 1907, for the supply and erection of steel railway bridges and hand-railing required for the Lansdowne Avenue Subway.

Envelopes containing tenders must be plainly marked on the outside as to contents.

Specifications may be seen and forms of tender obtained at the office of the City Engineer, Toronto.

The usual conditions relating to tendering as prescribed by city by-law must be strictly complied with or the tenders will not be entertained.

The lowest or any tender not necessarily accepted.

E. COATSWORTH (Mayor),
Chairman, Board of Control.
City Hall, Toronto, May 18th, 1907. 22-7t

DREDGING.

Urbana, Ohio.

Sealed proposals will be received by the Board of County Commissioners of Champaign County, Ohio, until 10 o'clock a. m., July 15th, 1907, for the construction of the Mad River Improvement. Said improvement consists of the removal of about 615,584 cu. yds. material.

Specifications with blank form of proposal may be obtained from the undersigned Engineer, Urbana, Ohio.

A certified check on an Urbana, Ohio, bank in the sum of $500, deposited in accordance with the terms of the specifications, will be required of each bidder.

A bond equal to the amount of the contract will be required of the successful bidder from a surety company doing business in the state of Ohio.

The right is reserved to reject any or all bids.

C. S. PRATT, Engineer.
C. E. RUSSELL, Co. Auditor.
June 4, 1907. 24-5t

MISSISSIPPI RIVER COMMISSION, 1st and 2d Districts, U. S. Engineer Office, Room 20, Custom House, Memphis, Tenn., June 5, 1907.—Sealed proposals for levee work in 1st and 2d Districts (White River Levee District) will be received at this office until 12 o'clock noon, July 5, 1907, and then publicly opened. Information furnished on application. WM. D. CONNOR, Capt. of Engrs. 24-3t

BRIDGE CONSTRUCTION.

Frackville, Pa.

Sealed proposals will be received by the Borough of Frackville, Schuylkill County, Pennsylvania, until 12 o'clock noon of Monday, July 1st, 1907, for the excavation and grading of Spring Street under the tracks of the Philadelphia and Reading Railway, and furnishing all material and labor required in the construction of two concrete abutments and in the erection of a steel bridge composed of four riveted girders, under said railroad.

Contractors are requested to thoroughly examine the specifications, plans and location of the bridge before bidding.

Bids from responsible and reliable contractors competent to perform this class of work, will alone be considered by the Borough Council. All bids to be accompanied by certified check for $1,500.00.

Necessary information and plans and specifications will be furnished by A. B. Cochran & Son, Engineers, Pottsville, Pa.

Council reserves the right to reject any and all bids.

Envelopes containing proposals should be marked "Proposal for Spring Street Bridge," and addressed to Mr. J. F. Carr, Town Clerk, Frackville, Penna. 23-4t

REPAIRING PIER.

Department of the Interior,
Office of the Commissioner,
San Juan, P. R., June 11, 1907.

In accordance with Section 2 of a Joint Resolution "To transfer to the Municipality of Mayaguez the ownership and administration of the iron pier located at the place known as 'La Puntilla' in the City of Mayaguez and for other purposes," approved March 14, 1907, sealed proposals for the repair and rental of the said pier, for a term not to exceed 15 years, will be received at this office until 10 A. M., Aug. 3, 1907, when they will be publicly opened and read.

The necessary repairs of said pier have been estimated to cost $36,394.

All necessary information, blank forms of proposals, instructions to bidders and specifications, will be furnished on application.

The right to reject any or all bids is reserved; also to award the contract upon other considerations than that of price alone.

L. H. GRAHAME,
25-5t Commissioner of the Interior.

U. S. ENGINEER OFFICE, Newport, R. I., June 17, 1907.—Sealed proposals for dredging in harbor at Block Island, R. I., will be received here until 11 A. M., July 17, 1907, and then publicly opened. Information furnished on application. J. H. WILLARD, Lt.-Col., Engrs. 25-4t

STREET IMPROVEMENT.

Bogota, N. J.

Sealed proposals will be received by the Mayor and Council of the Borough of Bogota, Bergen County, N. J., for macadamizing, laying curb and gutter and flag walks on South Street, Park Place, Homestead Place, Grove Street, Larch Avenue and Elm Avenue, on Tuesday, July 2, 1907, at 8 P. M., at the Council Rooms, Maple Street, Bogota.

The approximate quantities are:

Flagwalks: 10,500 lineal feet.
Curb: 10,500 lineal feet.
Gutters: 1,950 square yards.
Macadam: 9,200 square yards.

Plans and specifications can be seen and blank forms of proposals obtained at the office of Lemuel Lozier, Engineer, Bank Building, Main and Mercer Streets, Hackensack.

All bids shall be accompanied by a certified check to the order of the Mayor and Council of the Borough of Bogota for two hundred ($200) dollars.

The Mayor and Council reserves the right to reject any or all bids.

PETER F. HOPPER,
25-2t Chairman Street Committee.

U. S. ENGINEER OFFICE, Room F-7, Army Building, New York, N. Y., June 10, 1907.—Sealed proposals for dredging in Coney Island Channel and Flushing Bay, and extending breakwaters at Port Jefferson and Sag Harbor, N. Y., will be received at this office until 12 M., July 10, 1907, and then publicly opened. Information furnished on application. JOHN G. D. KNIGHT, Col., Engrs. 24-4t

U. S. ENGINEER OFFICE, New York City, June 8, 1907.—Sealed proposals for furnishing and trimming into U. S. dredges during the 12 months beginning July 1, 1907, about 24,000 tons bituminous coal will be received at this office until 12 M., June 28, 1907, and then publicly opened. Information furnished on application. W. L. MARSHALL, Lt.-Col., Engrs. 24-3t

PROPOSALS FOR CONSTRUCTION, Fort Dade, Fla., June 1, 1907.—Sealed proposals will be received until 8 P. M., July 1, 1907, then opened, for construction of brick roads and cement walks here. Information on application. U. S. reserves right to accept or reject any or all proposals, or any part thereof. CAPT. M. H. BARRY, Const'g Q. M. 24-8t

DEPARTMENT OF INTERIOR, June 12, 1907.—Sealed proposals will be received at this Department until 2 o'clock P. M., July 2, 1907, and then opened, for the installation of electric passenger elevator for the Interior Department (old Post Office Department) building, Washington, D. C., in accordance with specifications and drawings, copies of which may be obtained upon application to the Chief Clerk of this Department. JAMES RUDOLPH GARFIELD, Secretary. 25-2t

JIM FELLOWES SAYS

You hear a great deal about easy draft these days. You would think, to listen to or read some of the statements made, that light weight and length of wagon covered every need. It seems to me that the design and construction of the front circle is very important.

If a pole bears on a horse's neck it makes it hard for the horse to do his best work; if the circle binds it makes a wagon hard to turn and the binding is an evidence of faulty construction. I have seen some of the wagons that are boomed as "light, easy draft wagons," and I have found that they tip over about as easily as they turn.

Such wagons as have been talked most loudly about in regard to "easy draft" are celebrated for the easy way in which they make a draft on you for repairs.

Thus, I divide dumping wagons into four classes, and you may take your choice: the wagon that turns easily and tips just as easily—you don't want that kind; the wagon that is sound and stable but turns hard—you don't want to wear your horses out; the wagon that turns easily but has a pole which bears on the horse's neck—you don't want that wagon; first and last, the Watson Dump Wagon, which turns easily, goes in and comes out of rough excavation spots where others cannot go, never tips over, is practically unbreakable—you *do* want that wagon.

Just before I stop I want to go back to my talk of a few weeks ago on the subject of duplicate parts. It is the ideal method for the contractor who uses many wagons. Breakdowns seldom occur with Watson Dump Wagons, but it is a heap of satisfaction when a part is broken to be able to adjust a duplicate part with your two hands and a monkey wrench. Think that over.

Now, I want you to take up your new Watson Catalog and just notice how the Watson Wagon carries the pole.

I'll have more to say on this subject.

WATSON WAGON CO.

THE PIONEERS IN

BOTTOM DUMP WAGON CONSTRUCTION

OFFICE AND FACTORY CANASTOTA, N.Y.

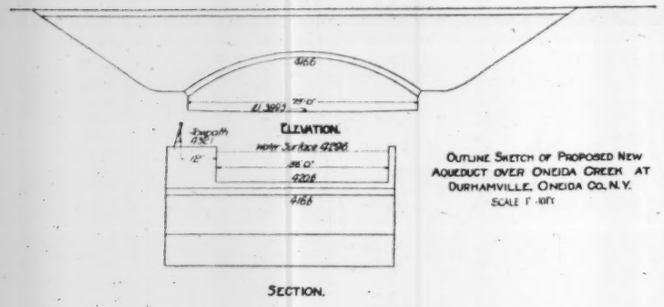
Branch Offices:

256 Broadway, New York City.

605 Witherspoon Bldg., Philadelphia, Pa.

1019 Westinghouse Bldg. Pittsburg, Pa.

99 Randolph Street, Chicago, Ill.



STATE OF NEW YORK,
OFFICE OF SUPERINTENDENT OF PUBLIC WORKS,
Albany, June 14, 1907.

ARCH CULVERT OR AQUEDUCT, DURHAMVILLE, NEAR CITY OF ONEIDA, N. Y.

Designs and plans, accompanied by specifications and proposals, will be received by the Superintendent of Public Works, at his office in the city of Albany, N. Y., until twelve o'clock noon of Thursday, July 18, 1907, for an arch culvert or aqueduct on the lines shown by the accompanying sketch, to be constructed over the Oneida creek at the site of the so-called Durhamville aqueduct, at a point where Oneida creek is crossed by the present Erie canal.

The culvert or aqueduct may be of concrete, reinforced with steel; it must be designed to give an opening of 1,000 square feet under the intrados of the arch with crown of said intrados at elevation of about 416.6 and the floor of said aqueduct at elevation 420.6, with a towing-path twelve feet wide on the north side thereof.

There shall be provided in the north side of the structure sluice gates having a combined total area of discharge equivalent to fifty square feet under a head of seven and one-half feet, and (also in the north side) spillways of a combined total length of forty feet, with elevation of crest at 429.6 and with at least one and one-half feet clear height of spillway opening.

The existing aqueduct must be entirely removed. All work must be so done as not to interfere with the use of the Erie canal during regular navigation, which will close about December 1, 1907, and reopen about May 1, 1908.

All materials and workmanship must be equal in all respects to the requirements of the specifications now in use by the State in the construction of the Barge canal. The work must be completed on or before April 20, 1908.

Plans and specifications for the work will be subject to the approval of the State Engineer and Surveyor and the Canal Board.

If the proposal, accompanying the plans and specifications which in all respects shall be deemed to be most acceptable, shall not be the lowest received, in order that the statute requiring an award of the contract to the lowest bidder may be complied with, the Superintendent of Public Works reserves the right to invite contractors who shall have submitted plans, and whose plans shall not be accepted, to submit proposals for doing the work upon the plans and specifications so accepted and approved; the proposer submitting the accepted plans, however, will be given an opportunity to modify his proposal.

Plans so submitted and approved shall become the property of the State, and in the event that the specifications at any point are at variance with the standard specifications for Barge Canal work, the standard specifications will govern.

The contractor to whom an award shall be made will be required to bind himself to an observance of all special laws with respect to the employment and payment of labor, hours constituting a day's work and assignment and sub-letting of contract.

Monthly estimates will be paid of ninety per cent. of the amount of work done at the contract price. Every proposal for said work must be accompanied by a money deposit in the form of a draft or certified check upon some good banking institution in the city of New York or Albany, issued by a national or state bank in good credit within the State, and payable at sight to the order of the Superintendent of Public Works for ten per cent. of the amount of the proposal, the deposit of the successful bidder to be retained by the Superintendent of Public Works as a guarantee of the execution of the contract under the terms and conditions of the proposal, and to be returned upon the proper execution and approval of the contract. The amount of bond for faithful performance of the contract will be fifty per cent., and the amount of labor bond required on execution of the contract will be thirty-five per cent. of the proposal. The right is reserved to reject any or all bids.

Each proposal, with plans and specifications, must be addressed to the Superintendent of Public Works, at Albany, N. Y., and must be endorsed on the envelope, "Plans, specifications and proposal for constructing arch culvert at Durhamville."

For further information and for contour maps, address F. C. STEVENS, Superintendent of Public Works, The Capitol, Albany, N. Y. 26-3t

GARBAGE DISPOSAL.

Harrisburg, Pa.

Collection and disposal of garbage, dead animals, miscellaneous refuse and ashes in the City of Harrisburg, Pa.: Notice is hereby given that sealed proposals will be received at the office of the City Clerk, in the Court House, until 12 o'clock noon, Monday, August 5, 1907, for the collection and sanitary disposal of the garbage and dead animals and the removal of ashes and miscellaneous refuse in the City of Harrisburg, for a period of ten years, beginning February 1, 1908. The attention of bidders is called to the following requirements: The bidder will name in his proposal the process or method which he intends to use for the disposal of the garbage and dead animals. No process or method of disposal or reduction shall be used, nor will any bids be accepted, under these specifications, except as hereinafter provided, unless the system, process or method proposed has been in actual, practical and successful use in at least one city of the United States, for at least two years immediately preceding the date of the bid, nor unless the bidder shall produce satisfactory evidence to the Sanitary Committee or Board of Health of the fact that he is possessed of, and has an unqualified right to use the process he proposes for the disposal of the garbage and dead animals of the City of Harrisburg, nor unless the process proposed shall be sufficiently described, and plans and blue print furnished with the bid, to enable the said committee to judge of its capability to satisfactorily dispose of all the garbage and dead animals of the city of Harrisburg. Any other practical system, process or method for the disposal of garbage that has not been in use for two years may be proposed and bids therefor will be received, with the data aforesaid; but no contract will be let for such system, process or method unless a bond in double the amount of the bond hereinafter required for the faithful performance of such contract shall be first filed with the City Solicitor and approved by Councils; but no process of incineration or reduction will be considered that is not guaranteed to be inoffensive to residents or pedestrians living or passing within two hundred (200) feet of the plant. All bids must be accompanied with a preliminary bond to the amount of ten (10) per cent. of the bid, which bond shall be forfeited to the City Treasurer in case the said bidder shall not execute and enter into and file a surety company bond in the sum of fifteen thousand ($15,000) dollars within fifteen (15) days after the contract shall have been awarded to him. All bids must be endorsed "Proposal for the collection and disposal of garbage, dead animals and miscellaneous refuse and ashes," addressed to the undersigned, and must be made upon forms furnished by the city clerk, Sanitary committee or Board of Health. The Sanitary committee or Board of Health reserves the right to reject any and all bids and readvertise the work if it shall be deemed for the best interest of the city.

SEYMOUR S. EBERTS,
26-1t Chairman Sanitary Committee.

BRIDGE.

Mt. Pulaski, Ill.

The Lake Fork Special Drainage District, etc., will receive bids up to July 15th at one o'clock P. M. for the construction of five steel bridges to be erected over the Drainage District of said District, three of said bridges being sixty feet long and two eighty feet long, all being twelve feet wide.

Sealed bids, accompanied by check certified by some Logan County Bank to the extent of ten per cent. of bid to be in the hands of some of the undersigned Commissioners, or their attorneys, Tomlinson & Smith, at Mt. Pulaski, Illinois, by one o'clock P. M., July 15, 1907.

W. E. BIRKS,
GEO. T. LUCAS,
W. H. WILLIAMS,
26-3t Commissioners.

U. S. ENGINEER OFFICE, Montgomery, Ala., May 31, 1907.—Sealed proposals for dredging at the mouths of Apalachicola and Carrabelle Rivers, Fla., will be received at this office until 12 o'clock noon, July 1, 1907, and then publicly opened. Information furnished on application. J. B. CAVANAUGH, Capt., Engrs. 23-4t

U. S. ENGINEER OFFICE, Cincinnati, O., June 18, 1907.—Sealed proposals for constructing dam of concrete, etc., at head of Browns Island, Ohio River, will be received here until 2 P. M., July 18, 1907, and then publicly opened. Information on application. WM. T. ROSSELL, Lt.-Col., Engrs. 25-4t

COURT HOUSE.

Wilkes-Barre, Pa.

Sealed proposals will be received by the county controller of Luzerne County until o'clock P. M., Monday, July 15, 1907, for the construction of the interior work of the court-house building of the County of Luzerne now being erected on river comm at the corner of North River and Nor Streets, in the City of Wilkes-Barre, Pa. Plans and specifications prepared by McCmick & French, architects, and blank for of contract to be entered into can be se at the commissioners' office in the cou house on Public Square, Wilkes-Barre, Pa.

Every bidder must sign the form of co tract on file in the commissioners' office Luzerne County and file a bond with as a part of the bid. The bond shall be the amount of the bid and shall be execu by a surety company or by sureties satisfactory to and approved by the commissioners of Luzerne County.

A certified check or a bond for 5 per cent of the amount of the bid must be enclosed in an envelope containing the proposal, as a guarantee that the bidder will enter into the contract, if his bid is accepted by the county commissioners.

Every bidder must set forth in his proposal the number of days in which he will complete the contract from the time of the execution and delivery of the contract.

All bids to be filled out on blanks which can be had at the county commissioners' office of Luzerne County.

All certified checks and bonds deposited by bidders whose proposals shall not be accepted by the County of Luzerne will be returned to the person or persons making the same as soon as the successful bidder has been selected.

Bidders must set forth in their proposals their names and places of business and the delivery of a notice to such place of business shall be deemed to be a sufficient delivery and notice to such bidder.

The contract will be let to the lowest and best bidder, and if the bidder shall fail to commence work under the contract as required, the amount of the certified check or guarantee bond for 5 per cent. of the contract price shall be forfeited to the County of Luzerne without diminishing or impairing its just right to damages.

The County of Luzerne reserves the right to reject any and all proposals and shall not incur any liability hereunder unless contract be executed by the county commissioners.

Bids to be indorsed, "Proposals for construction of the interior work of the new court house, Wilkes-Barre, Luzerne County, Pa.," with the name of the person or persons or corporations making the same.

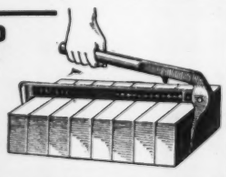
JAMES M. NORRIS,
Controller.

Attest:
JAMES A. DEWEY,
Deputy Controller. 25-3t

U. S. ENGINEER OFFICE, Room F-7, Army Building, New York, N. Y., June 24, 1907.—Sealed proposals for dredging in mouth of Schodack Creek, Hudson River, N. Y., will be received at this office until 12 M., July 24, 1907, and then publicly opened. Information furnished on application. JOHN G. D. KNIGHT, Col., Engrs. 26-4t

U. S. ENGINEER OFFICE, Army Building, N. Y. City, June 24, 1907.—Sealed proposals for Dredging in Bay Ridge and Red Hook Channels, N. Y. Harbor, will be received at this office until 12 M., July 24, 1907, and then publicly opened. Information furnished on application. W. L. MARSHALL, Lt.-Col., Engrs. 26-4t

OUR CELEBRATED BRICK CLAMP
We also carry a full line of Street Drainage Goods, Adjustable Catch Basin, Manhole, Lamphole, Boulevard, Park, Gutter Basin Covers, Traps and Brick Lifters.
DUPLEX MFG. AND FOY CO., New England Bldg., Cleveland, O.



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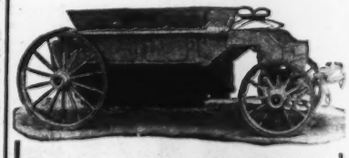

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FOR QUICK, DEPENDABLE, FASTENINGS TO BRICK STONE MASONRY
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EXPANSION & TOGGLE BOLTS For fastening all kinds of material to stone and brickwork. Send for Catalogue.

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PATENTED AND AUTHORIZED
SHOULD BE SPECIFIED BY NAME WHERE A STANDARD AUTHORIZED MAIL CHUTE EQUIPMENT IS DESIRED. INSTALLED IN CONNECTION WITH THE U. S. FREE COLLECTION SERVICE ONLY BY THE SOLE MAKERS
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ILLUSTRATION ABOVE SHOWS TIGHT BOTTOMS CLOSED

Made to Fit Any Gear With a Reach

Capacity, one yard to five yards. Made of best material. Heavily ironed, steel lined bottoms.

We positively have the only dumping apparatus on the market that actually equalizes the load over both axles, greatly reducing the draft.

Why You Should Buy Chicago Quick Dumpers

1st. You can use your old gears.
2d. You can couple up to 65 inches.
3d. You reduce draft on team 25 per cent. to 50 per cent.
4th. You get an absolutely tight box.
5th. You reduce cost of your equipment 75 per cent.

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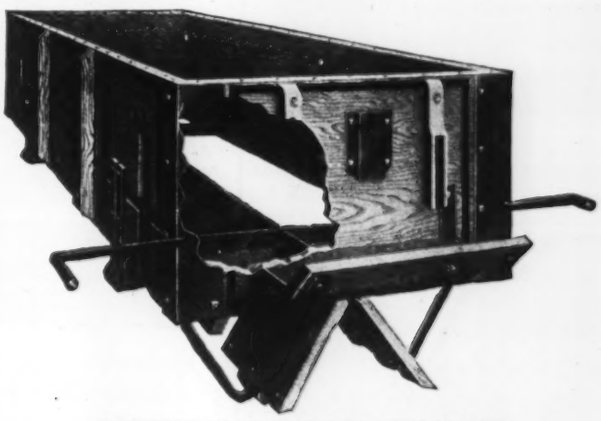


ILLUSTRATION ABOVE SHOWS BOTTOMS OPEN

BLACK MANUFACTURING CO., 126 East Ohio St., Chicago, Ill.

HAULING AND LAYING WATER PIPE.

Office of Sewerage and Water Board, Nos. 602-604 Carondelet Street, New Orleans, La., June 25th, 1907.

Sealed proposals will be received until 3 o'clock P. M., Wednesday, September 4th, 1907, for the hauling and laying of approximately 250 miles of cast-iron water pipe, from 4 to 30 inches in diameter and aggregating about 26,000 tons.

The work will be divided into four contracts; and a certified check on a New Orleans bank made for $1,500 must be deposited with the Secretary of the Sewerage and Water Board not later than 2 o'clock P. M., Wednesday, September 4th, 1907, by each bidder and one for each contract bid upon.

A surety company bond for an amount equal to 25 per cent. of the gross amount of each contract will be required of the successful bidder in each case.

Specifications, general plans and blank form of proposal may be seen at the office of the Board, and specifications will be printed, ready for distribution, after July 15th, 1907.

The right is reserved to reject all bids.

F. S. SHIELDS, Secretary.

GEO. G. EARL, General Superintendent. 26-10t

GRADING.

Pensacola, Fla.

Proposals for grading forty (40) miles of railroad, etc., will be received at the office of the Interstate Contract Co., No. 224 Brent Building, Pensacola, Fla., until noon on July 10, 1907.

The plans, profiles, contract specifications and forms of proposals for work can be seen at the above address.

The work to be graded, covers twenty (20) miles of the Andalusia Division, and twenty (20) miles of the Atmore Division, of the Pensacola, Alabama & Western Railroad.

B. K. ROBERTS, For the Interstate Contract Company. 26-1t

NO EXTRA CHARGE

CLASSIFIED ADVERTISEMENTS for Engineering News may be left at any American District Messenger Office in New York City until 9 p. m. every day.

Classified Advertisements in Engineering News bring results.

PAVING.

Moravia, N. Y.

Sealed bids will be received by the Village Board of the village of Moravia, N. Y., for paving Central Street with vitrified brick on concrete foundation.

The work embraces about 3,634 sq. yds. pavement; 2,844 ft. of concrete combined curb and gutter; 8 catch-basins with tile drain outlets.

Plans and specifications may be seen at the office of the Village Board on and after July 1st.

Bids must be presented on or before Wednesday, July 10th, 12 M. Each bid must be accompanied by a certified check for $500.

The Board reserves the right to reject any and all bids.

GUY HILLIARD, Clerk of Village Board of Moravia. 26-1t.

U. S. ENGINEER OFFICE, Room C8, Army Building, 39 Whitehall Street, New York City, June 27, 1907.—Sealed proposals for dredging in Woodbridge Creek, N. J., will be received at this office until 12 M., July 27, 1907, and then publicly opened. Information furnished on application. D. W. LOCKWOOD, Colonel, Corps of Engineers. 26-4t

U. S. ENGINEER OFFICE, Charleston, S. C., June 18, 1907.—Sealed proposals for furnishing creosoted lumber and rubble stone will be received here until noon, July 11, 1907, and then publicly opened. Information furnished on application. G. P. HOWELL, Capt., Engrs. 26-2t

U. S. ENGINEER OFFICE, P. O. Box 654, St. Paul, Minn., June 20, 1907.—Sealed proposals for the reconstruction of Sandy Lake Reservoir Dam will be received at this office until 11 a. m., July 20, 1907, and then publicly opened. Information furnished on application. EDWARD H. SCHULZ, Capt. Engrs. 26-4t

U. S. ENGINEER OFFICE, Room F-7, Army Building, New York, N. Y., June 17, 1907.—Sealed proposals for dredging in Hudson River, N. Y., will be received at this office until 12 M., July 17, 1907, and then publicly opened. Information furnished on application. JOHN G. D. KNIGHT, Col., Engrs. 26-4t

U. S. ENGINEER OFFICE, Jacksonville, Fla., June 12, 1907.—Sealed proposals for dredging in St. Johns River, Fla., at Jacksonville, will be received here until 12 o'clock, noon, July 24, 1907, and then publicly opened. Information on application. FRANCIS R. SHUNK, Maj., Engrs. 26-2t 2-2t

The Eagle Dump Wagon

REASONS FOR ITS POPULARITY

Its Mechanism is Simple
Some wagons are complicated.

It Has but One Chain, yet Each Door Rests on a Chain
Some wagons have five chains and none under the doors. Some have a chain under one door only.

Its Chain Takes up Its Own Slack, Shutting both Doors Tight
Most wagons have no way to take up this slack and the wagons leak their load.

Its Doors Always Lap in the Center
Some wagon doors never lap.

Its Hinges on Body and Doors are Wrought
Some wagons have malleable cast hinges.

Its Neck is Lined both Inside and Outside
Some wagons are lined outside only, some inside only, some neither inside nor outside.

It Has Been on the Market for Seven Years. It Has Been Tested
Some wagons are experiments yet.

A 2-yard Wagon — 1½-yard by removing upper top box.

We Also Make Dumping Beds to Fit Any Farm Gear.

Address

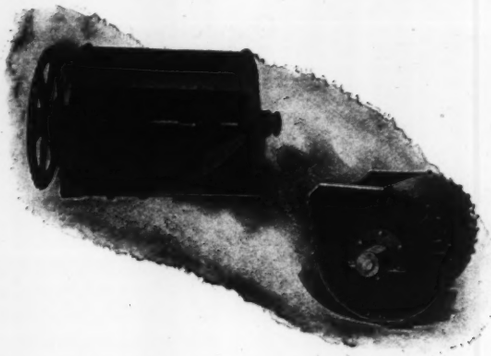
The Eagle Wagon Works, Auburn, N. Y., U. S. A.

For other Proposal Advertisements see pages 55, 56, 57, 58, 60, 61, 62, of Advertisements, and Construction News page 234.

AMERICAN MIXERS MIX

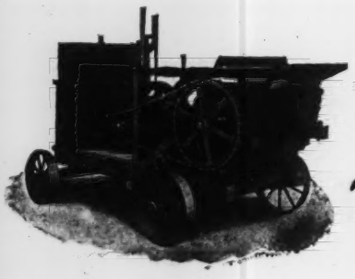
They Are Substantial — Built for Service

The AMERICAN mixer is the only machine on the market that can be used for mixing all kinds of materials, fine, medium, coarse, dry, wet or "sloppy." WHY? Because the mixing principle of the AMERICAN is positive—Revolving Plows—making it as efficient for mixing mortar, plaster, cement top finish, etc., as for rough concrete. There is no rolling, tumbling motion to ball the materials in the AMERICAN—simply turning-over, back-and-forth, endwise, sidewise, up-and-down movements, giving the most thorough and complete mixing in the shortest possible time.



The AMERICAN is a mixer, not a tumbler. If you put dough in a barrel and roll it down hill, do you suppose it would be kneaded? Hardly. Well, it is much the same principle with concrete mixers. You want the cement to fill the sand voids and the sand and cement to fill the gravel voids. To do this, thoroughly you must divide and subdivide the batch, cut it up and turn it over many times. That is MIXING on the only correct principle. Our revolving plows do that and you can see them, as well as the entire batch, during the mixing process.

If you need a concrete mixer, you certainly need the best that the market affords—one that is strictly up-to-date. The AMERICAN costs no more than the old style mixers of like capacity, and will give better satisfaction, save you more money, and with this one machine all kinds of materials may be perfectly mixed.

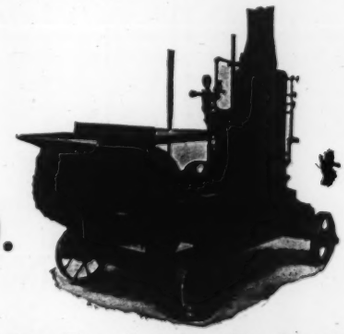


The AMERICAN mixer is manufactured in four regular sizes, suitable for any and all classes of work. All sizes are mounted either on trucks or skids, with or without power equipment.

Our catalog J or booklet of "mixer facts" will be sent upon request.

THE INTERNATIONAL T. AND FIREPROOFING CO.

COLUMBUS, OHIO



EXCAVATION.

NUTWOOD DRAINAGE AND LEVEE DISTRICT.

Jerseyville, Ill.

Sealed bids will be received by the Commissioners of the Nutwood Drainage and Levee District of Jersey County and Greene County, in the State of Illinois, at the office of the County Clerk of Jersey County, at Jerseyville, Illinois, until 2 o'clock P. M., July 10th, 1907, at which time and place said Commissioners will attend and publicly open said bids.

The work for which bids are solicited will be as follows:

Clearing—Right of Way for Levee..120 acres
Clearing—Right of Way for New Channel .....15 acres
Excavation—Muck Ditch under Levee. .....140,275 cu. yds.
Excavation—Drainage Ditches.304,700 cu. yds.
Excavation—New Channel for Macoupin Creek .....150,600 cu. yds.
Fill—Levee .....1,399,400 cu. yds.

The foregoing statement of quantities is approximately correct and will be used as the basis upon which the bids will be compared, but is not guaranteed.

Bids will be considered upon the foregoing work as a whole or in two sections, as follows:

1st. Excavation for Drainage Ditches, which will include the clearing of the land for the same.

2nd. All other work above specified.

Each bid must be accompanied by cash or a certified check in an amount equal to five (5) per cent. of the amount of the bid; enclosed in a separate envelope from that enclosing the bid, and if a certified check the same must be certified without qualification or reservation and drawn on some responsible bank in Jerseyville, Illinois, Chicago, Illinois, or St. Louis, Mo.; said check to be made payable to the order of the Treasurer of the Nutwood Drainage and Levee District. The envelope enclosing the cash or certified check shall be addressed plainly upon the outside with the name of the depositor and the fact that the said envelope contains cash or certified check.

Within ten days after notice of the same, the successful bidder will be required to enter into contract and execute a good and sufficient bond in an amount equal to twenty-five (25) per cent. of the amount of the contract with sureties to be approved by the Commissioners of said Drainage District.

The checks of unsuccessful bidders will be returned upon the awarding of the contract and of the successful bidder upon the signing of the contract and filing of acceptable bond.

Bids must be made in conformity with the forms for said bids which are attached to and form a part of the Specifications and Contract.

Plans and Specifications are on file and may be seen at the office of the County Clerk in the City of Jerseyville, Illinois, and at the office of the Harman Engineering Co., No. 109 South Jefferson Ave., Peoria, Illinois. Copy of the specifications, Form of Contract, Form of Bond and Form of Bid may be procured at either of the aforesaid places.

The Commissioners reserve the right to reject any or all bids.

AARON O. AUTEN,
S. M. REDDISH,
GEO. W. EDWARDS,
Commissioners.
Jerseyville, Ill.

HARMAN ENGINEERING CO.,
Engineers,
Peoria, Ill. 24-3t

MUNICIPAL CIVIL SERVICE COMMISSION,
299 Broadway.
New York, June 11, 1907.

PUBLIC NOTICE IS HEREBY GIVEN that application will be received from Tuesday, June 11, until 4 P. M., Thursday, July 11, 1907, for the position of

ASSISTANT ENGINEER, BOARD OF WATER SUPPLY.

The examination will be held on Wednesday, July 31, 1907, at 10 A. M.

Candidates should not apply for this position unless they are ready to accept employment in any part of the State where their services may be needed.

The requirement of residence in the State of New York has been waived so far as it applies to this examination.

That section of Rule VIII, requiring that applications from non-residents of the City should bear the certificates of at least two reputable citizens of the City of New York, has been waived for this examination, subject to the approval of the Mayor and the State Civil Service Commission.

Applications must be made on forms supplied by the Commission.

The salary is $1,350 per annum and upwards. For further information as to compensation and qualification for the position, address the Board of Water Supply, 299 Broadway, New York City.

FRANK A. SPENCER,
24-4t Secretary.

CONCRETE RESERVOIR. LINING.

Olean, N. Y.

Sealed proposals will be received at the office of the Water Commissioners, City Building, Olean, N. Y., until July 1st, 1907, at 12 o'clock noon, for concrete lining of a new distributing reservoir on Cook's hill, South Olean.

General plans for the work can be seen, and specifications and forms of proposals and contract can be obtained at the office of the Board of Water Commissioners, City Building, Olean, N. Y.

The Board reserves the right to reject any or all bids, if it shall deem it to the best interest for the city.

The Board of Water Commissioners of the City of Olean, N. Y.

D. E. BARROWS,
DANIEL P. RAY,
G. S. BUSSELL,
Commissioners.

E. A. FISHER,
JOHN F. SKINNER,
Consulting Engineers.

Olean, N. Y., June 8th, 1907. 24-3t

HYDRO-ELECTRIC DEVELOPMENT CONSTRUCTION AND EQUIPMENT.

Winnipeg, Man.

Sealed tenders, on prescribed forms, addressed to the Chairman of the Board of Control, Winnipeg, Canada, and marked on the envelope "Point du Bois Hydro-Electric Development, tender for....." (here add the particular item or items as below), will be received at the office of the undersigned up to noon of Tuesday, 3rd day of September, 1907, for the construction of the General Works, and for the supply and erection of the various portions of the equipment for the Hydro-Electric Works and Station at Point du Bois, for a Transmission Line between Point du Bois and Winnipeg, and for a Receiving Transformer Station in Winnipeg.

Copies of the Instructions to Bidders, Plans, Specifications and Forms of Tender may be obtained at the Power Engineer's Office, Carnegie Library Building, Winnipeg, Canada, or may be seen at the offices of Messrs. Smith, Kerry & Chace, 124-6 Confederation Life Bldg., Toronto.

Each tender must be accompanied by a certified cheque payable to the order of the City Treasurer for the sum called for in the corresponding "Instructions to Bidders," which cheque will become forfeit to the Corporation in the event of the successful tenderer refusing or neglecting to sign a satisfactory contract when called upon to do so.

Individual tenders will be received for:—

*(3) Telephone System.
(4) General Works at Point du Bois.
(5) 4,000 HP. Turbines (five).
(6) 450 HP. Turbines (two).
(7) 3,000 KW. Generators (five).
(8) 250 KW. Generators (two).
(9) Induction Motors (one).
(10) Step-Up Transformers (five).
(11) Generating Station, Switching and Accessory Apparatus.
(12) Generating Station, Light, Heat and Power Systems.
(13) Generating Station, Oil and Air Systems.
(14) Erection of Transmission System (75 miles).
(15) Steel Towers.
(16) High Tension Insulators.
(17) Electric Transmission Cable.
(18) Terminal Station.
(19) Step-Down Transformers (five).
(20) Terminal Station, Switching and Accessory Apparatus.
(21) Terminal Station, Light, Heat and Power Systems.
(22) Terminal Station, Oil and Air Systems.
(24) Testing Transformers and Apparatus.
(25) Electric Travelling Cranes (three).
(26) Turbine Governors (seven).
(27) Auxiliary Apparatus.
(28) Repair Shops.

An alternative lump-sum tender will be received for the entire work, including all of the above mentioned items together with additional work and equipment necessary to install a complete working plant. As a further alternative, tenderers may include or group together one or more of the above items providing that they have also tendered for the individual items of such group.

The Board reserves the right to reject any or all tenders, or to accept any tender which shall appear advantageous to the City of Winnipeg.

M. PETERSON,
Secretary.

The Office of the Board of Control,
Winnipeg, June 8, 1907.

*The numbers are those of the different volumes of specification. 24-6t

For other Proposal Advertisements see pages 55, 56, 57, 58, 60, 61, 62 of Advertisements, and Construction News page 224.

The Chicago Improved Cube Mixer

Mixes Concrete of Standard Quality Faster Than Any Other Mixer in the World.

Read These Letters

The first letter.
Notice the date.
Rather conservative.

"No criticism to make."
"No clogging or balling."
"No repairs."
Own four other mixers—not Chicago Improved Cubes other makes.

The second letter.
Notice date.
Very enthusiastic.

"Concrete always first-class—inspector very strict—no trouble."
"No repairs. As good as when purchased."
"Used other mixers—none as good as this."
"One batch per minute."

Municipal Eng. & Cont'g. Co., Chicago, Ill. CLEVELAND, OHIO, May 14, 1905.

Dear Sir:—Your communication of the 14th inst. in regard to Cubical Mixer of the Municipal Engineering & Contracting Co. received. In reply would say that we are using two of your concrete mixers since the last of September in the elimination of grade crossings, this city. This work, as you are aware, consists of heavy masonry, and in using your mixer on this work, we have no particular criticism to make. We have not noticed any particular tendency to clog in discharging into car to convey to work, nor have we noticed that the material balled in any great extent.

This concrete is being mixed very wet, and there should be no possible chance for material to ball.

As previously stated, we commenced using this mixer in Sept. They have been used continuously, and we are not able to make any particular statement as to durability of machine. Time will tell in that respect.*

If any repairs have been ordered, it has not come to the attention of this office, and I do not think we have been required to make any repairs on the machine up to the present time.

These two machines are only a portion of our equipment. We have three ——— Mixers, and one ——— all of which are in service at the present time.

Very truly yours,

*See later letter below.

Municipal Eng. & Cont'g. Co., Chicago, Ill. CLEVELAND, OHIO, July 3, 1906.

Dear Sir:—As our work is now very nearly completed on the Pennsylvania grade crossing out Broadway, I take this time in writing you in regard to your Chicago Improved Cube Mixer.

We have used the No. 17 and No. 22 mixers continuously on this job and have had no occasion to shut down on account of the mixers. The concrete has never been anything but first class, and while the engineer on this job was very strict in his inspection, we never had any complaint whatever, no matter how much we crowded the mixers.

We believe your mixer is the best one on the market either in "wet" or "dry" mix, and it affords us pleasure to be able to speak a good word for it. The mixers show no tendency to clog while discharging, neither does it show any tendency to ball up. It discharges very rapidly.

The mixers with the exception of a little wear and tear, are as good to-day as when we bought them, and we would be glad to answer any inquiries from any parties wanting to know anything about your mixers.

We have worked other mixers, and have seen other kinds of machines that we did not own, but have yet to find one that suits us as well as yours.

We have records of turning out a batch of concrete in one minute and had very little trouble in turning them out in one and one-half minutes. The mixers have certainly done more than you said they would do.

Assuring you that we are perfectly satisfied with your mixers, we are

Very truly yours,

Now Analyze These Letters

Think What They Prove

They show that this contractor had bought and used *four* mixers of *other* makes than ours and after using ours more than a year, right along *with the others*, pronounces ours *the best*.

We will gladly give on request name and address of contracting firm who wrote us the above letter.

ASK US FOR OUR CATALOGUE Nº 2.

Municipal Engineering and Contracting Company

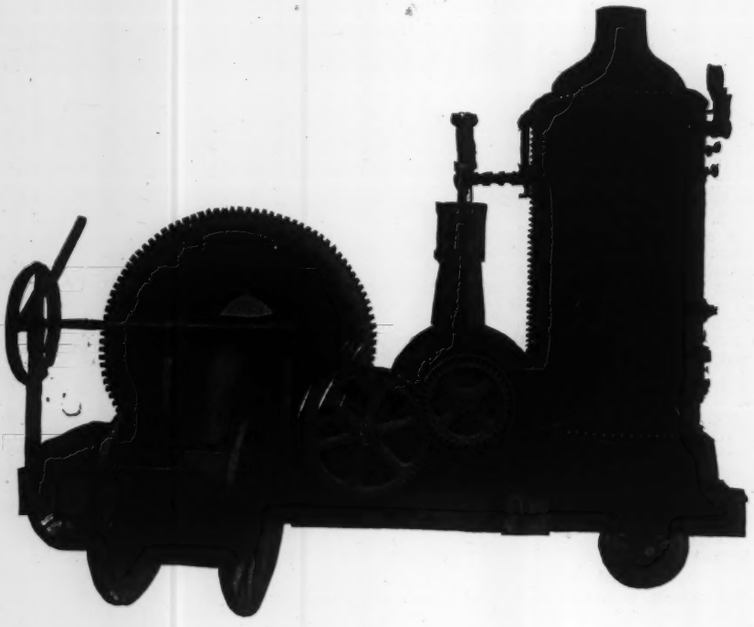
Railway Exchange, Chicago

New England Agents,
DYAR SUPPLY CO.
7 Sudbury Street, BOSTON, MASS.

N. Y. Office,
90 WEST STREET

Why Ransome Mixers are Popular Mixers for Building Work

In six reinforced concrete buildings described last week in as many engineering papers the concrete was mixed by eight Ransome Mixers. "Merely chance," you remark. By no means. Ransome Mixers are more extensively used in building work than other mixers because they are particularly suited to building work. Absolutely uniform and homogeneous concrete is essential in building work and Ransome Mixers always turn out this kind of concrete. Moreover, a mixer is required for building work which will discharge its batch in a convenient manner for transportation by bucket hoists, wheelbarrows or carts. A Ransome Mixer does this—it discharges the whole or any part of the batch as desired and does it without tilting or stopping the mixing operation. Finally, we design for building work complete mixing and hoisting plants suitable for various conditions of building work. Some of these plants are illustrated and described in our Handbook of Concrete Machinery, which will be sent upon request.



PROMPT DELIVERY OF SHEET PILING—STOCK SHIPMENT

Spring Lock Piling, illustrated by the side borders on the lower half of this page, weighs 17 pounds per square foot.

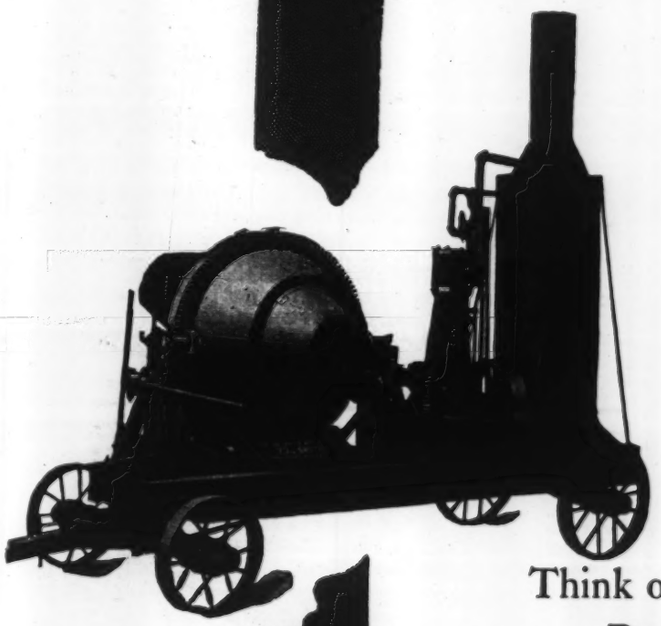
Ransome Concrete Machinery Co.
Dunellen, N. J.

BRANCH OFFICES

Atlas Building, San Francisco, Cal.
Commonwealth Building, Philadelphia
286 St. James Street, Montreal
Candler Building, Atlanta, Ga.
1336 Monadnock Building, Chicago
6 Beacon Street, Boston, Mass.
404 House Building, Pittsburg
11 and 1133 Broadway, New York
1125 Chemical Building, St. Louis
Dispatch Building, Columbus, Ohio

This border represents Ransome's Twisted Steel. Furnished in all sizes and lengths. Percentage of elongation is less than with any other form of reinforcing metal.

THINK!



THINK of the number of

CONCRETE MIXERS

advertised here and elsewhere.

THINK of the many which have *come* and *gone* in the last five years.

Then you will naturally think there must be some good reasons why the

Smith Mixer

Has been the STANDARD

all the time, and still remains *head and shoulders above all others* in popularity and numbers sold.

Think out the reasons:

Perfection in Construction
Efficiency in Mixing
Proficiency in Earning Dollars

If you want to experiment, and buy expensive experience, look elsewhere. If you wish to *profit by the experience of others*

Buy Smith Mixers

Three thousand thinkers have bought **Smith Mixers.** Ask any of them.

Contractors' Supply and Equipment Company

Main Office, 305 Old Colony Building, Chicago, Ill.

New York Office, 170 Broadway

ATLANTA, W. E. Austin & Co., 1333 Candler Building.
BOSTON, Harold L. Bond & Co., 140 Pearl Street.
CINCINNATI, Queen City Supply Co., 205 West Pearl Street.
CLEVELAND, W. M. Pattison Supply Co., 197 St. Clair Ave., N. E.
DENVER, S. G. Shaw & Co., 1721 Arapahoe Street.
DETROIT, 1208 Majestic Bldg., William Ord, Manager.
KANSAS CITY, Bunting-Stone Hardware Co., 804 Walnut Street.
MONTREAL, CANADA, Mussens Limited, 299 St. James Street.
PITTSBURG, John L. Kirk, 204 Ferguson Building.
ST. LOUIS, J. Power Hely, 900 Wainwright Building.
ST. PAUL, G. E. Ingersoll, 201 German-American Natl. Bank Bldg.
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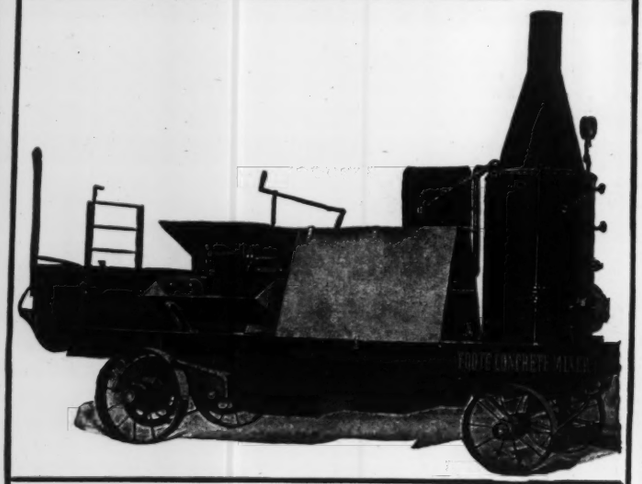
SAN FRANCISCO, Henshaw, Bulkley & Co., 221 Spear Street.
SEATTLE, Caldwell Brothers, 115 Jackson Street.

FOOTE MIXERS

CONTINUOUS AND BATCH

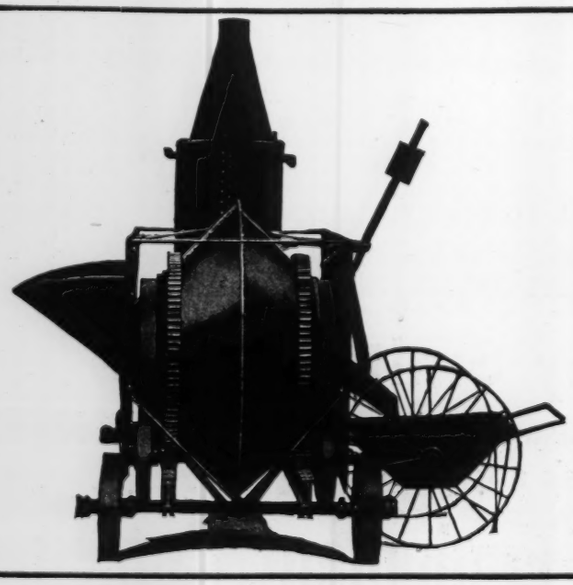
CONTINUOUS MIXER WITH AUTOMATIC FEEDS



THE MACHINE FOR STREET WORK

Each type has its advantages over the other for certain kinds of work. We can't tell you all about it here. Send for the new catalogues.

A BATCH MIXER FOR BATCH JOBS



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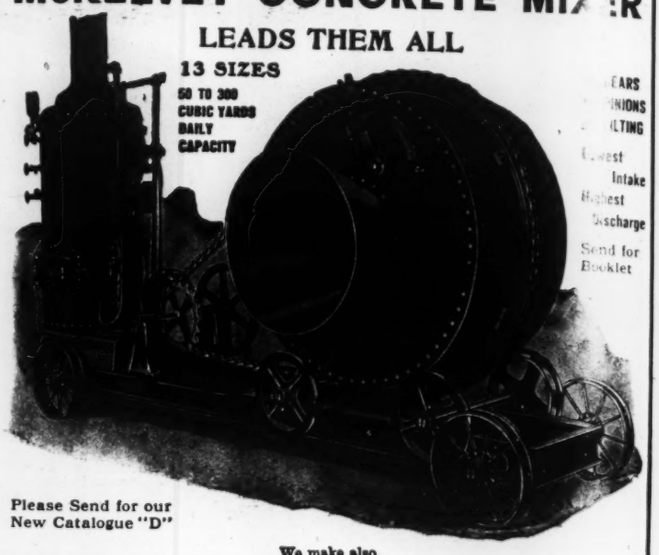
McKELVEY BATCH MIXERS

Have Patented Gravity Shovels to do the Mixing
The Lever on Side of the Drum Operates the Discharge

We're from OHIO--We'll Show YOU
THAT THE
McKELVEY CONCRETE MIXER
LEADS THEM ALL

13 SIZES
50 TO 300 CUBIC YARDS DAILY CAPACITY



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Lowest Intake
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Dump Buckets, Dump Wagons, Rock Crushers, Industrial Cars, Turntables, Frogs, Switches, etc.

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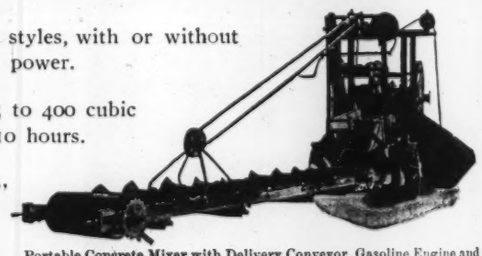
Drake Concrete Mixers

Made in thirty styles, with or without power.

Capacities, 25 to 400 cubic yards—10 hours.

Catalogue "E" on request.



Portable Concrete Mixer with Delivery Conveyor, Gasoline Engine and Special Loading Device.

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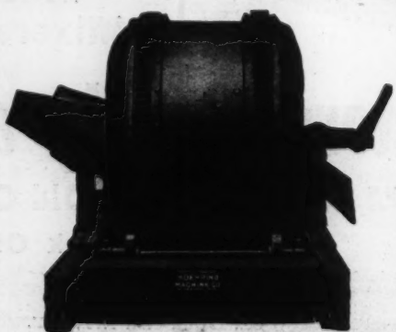
KOEHRING MIXERS



Help to build up a concrete reputation for you.

To prove the merits of a mixer, the truest test is in comparison of its production.

Write for Pamphlet "C"

KOEHRING MACHINE COMPANY
507 Germania Building **Milwaukee, Wis.**

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PORTABLE HOISTING ENGINES

for all purposes, and sell them at the lowest possible price. All Engines built on Steel Frame and with Steel Drum Barrels.

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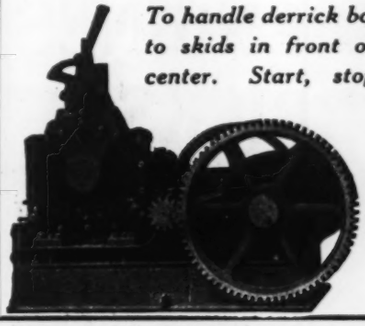

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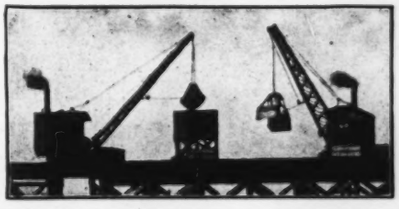
The Browning Engineering Co., CLEVELAND, O. DEPT. 8



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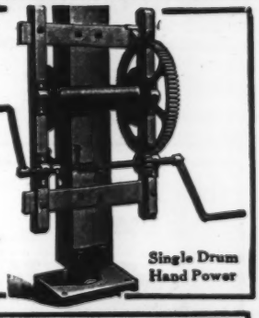

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ANNEALED AND HEAT TREATED

Will accomplish 30 per cent. more work than Forged and Annealed Carbon Steel Rolls

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43 EXCHANGE PLACE, NEW YORK

STIFF LEG HEAD BLOCK

of Latest Pattern

Note how simply it is attached to mast

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THE TERRY & TENCH COMPANY, Inc.

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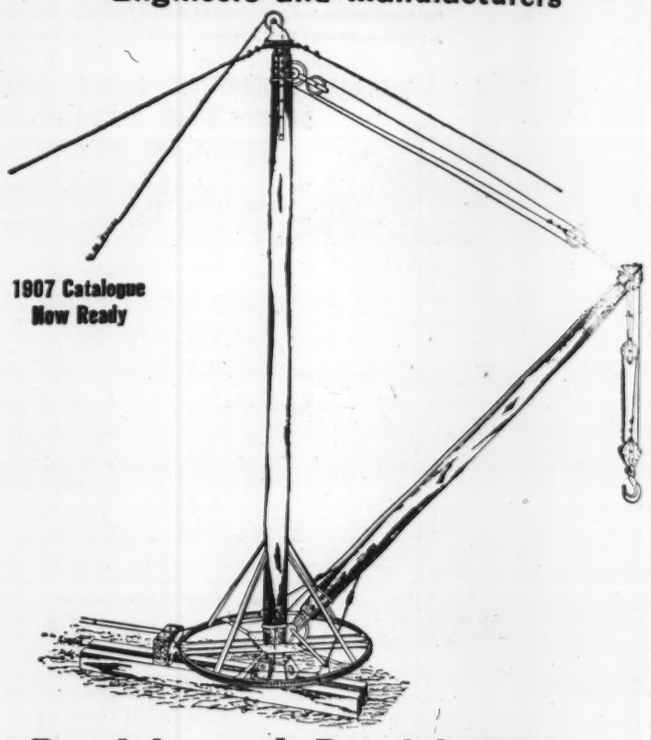

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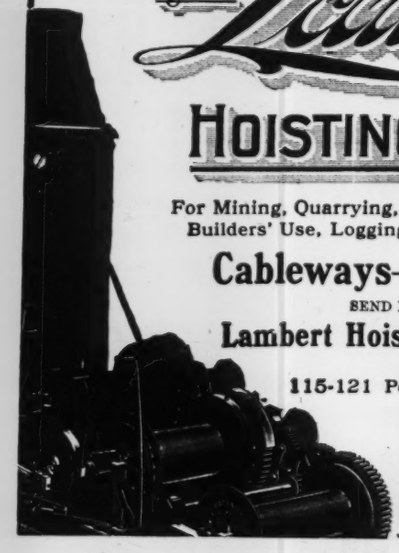

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For Railroads, Bridge and Dock Building, Contractors, etc.

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The Boom Swinging Gear is mounted on an extension of the engine skids, and is especially built for heavy duty. It is superior in every respect to anything heretofore produced.

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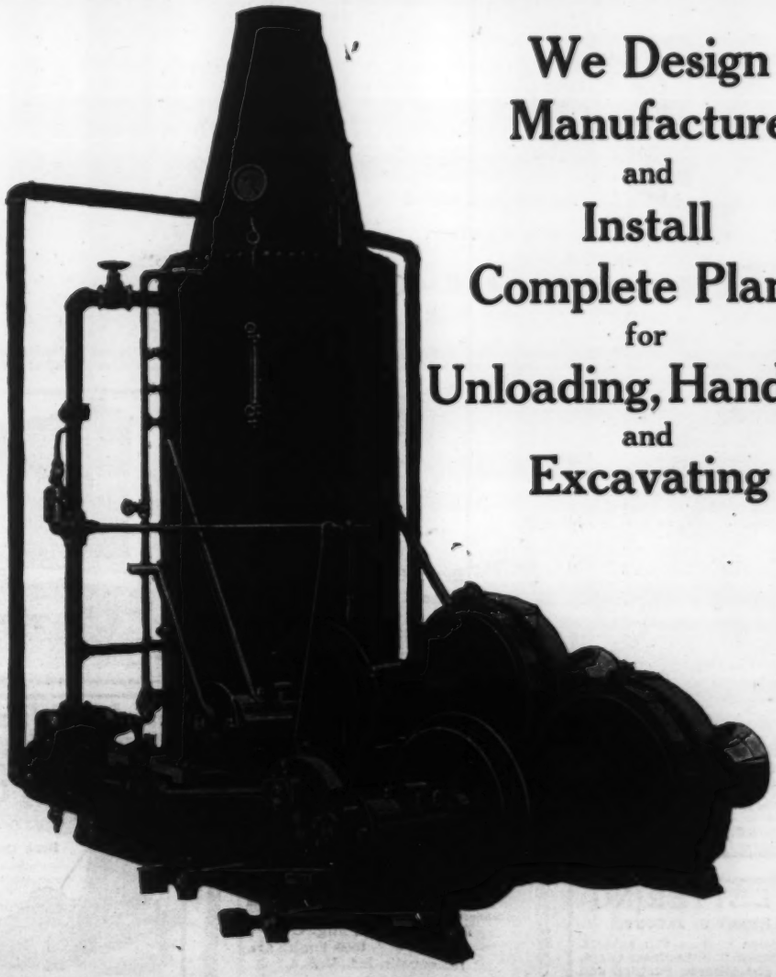

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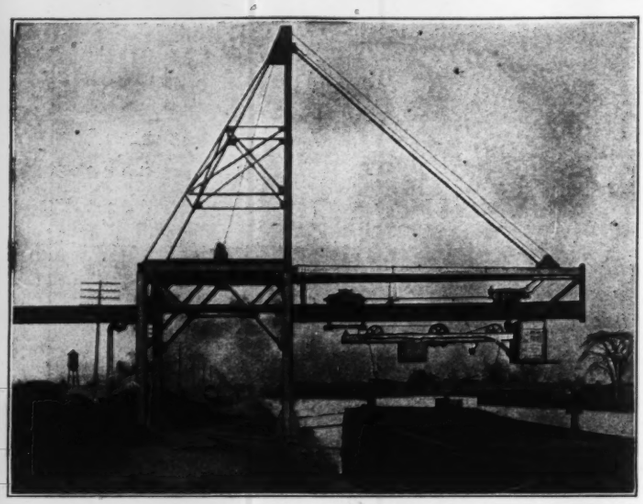

is measured by the ECONOMY which results from the electrical operation and one-man control; by the EASE AND SPEED with which various products may be handled; and by the FACILITY with which obstacles—streets, railroads, buildings, climatic conditions, etc.—are overcome.

Illustration shows portion of installation for Canada Car Co., Ltd., Montreal. Two telphers unload lumber from boats and convey it to storage yard, carrying a load of about 7 tons a distance of 4000 feet in a little over six minutes. The adaptability of the machine to handling other materials is evident.

Write us for a plan exactly suitable to the conditions by which you are confronted

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This gear is made in segments like an orange. It has cut teeth. The man is a full-size man. We make gears of every size and description. Accurately cut gears.
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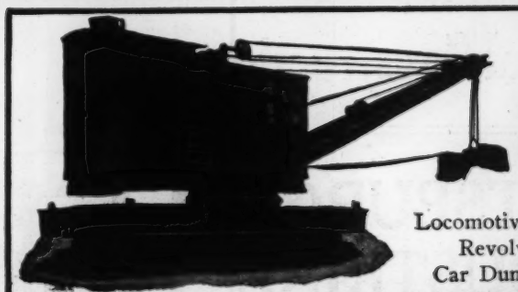

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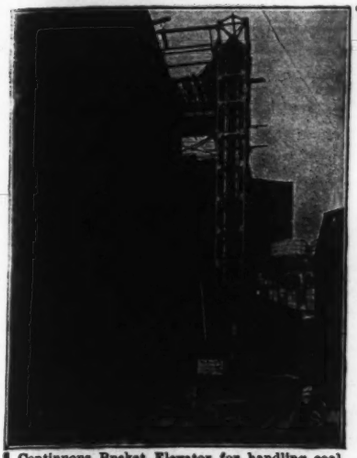

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ELEVATING and CONVEYING MACHINERY

FOR THE

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Complete Equipments Designed and Furnished

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are similar in their operation, since only "Rolling Contact" exists. This lessens Friction and Power.
It runs at very high speed, for
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because the flanges guide the chain in pla e. Each Link meshes accurately with the depressions in the driver and follower.

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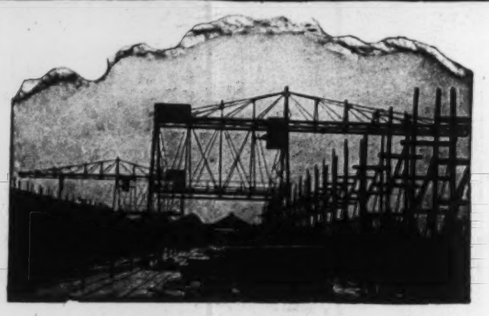

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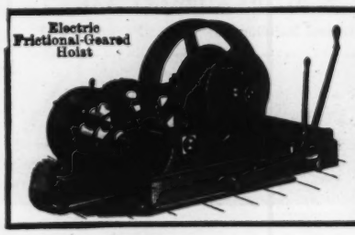

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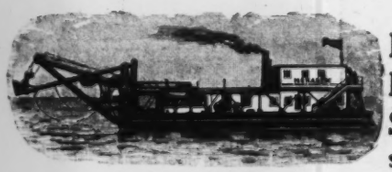

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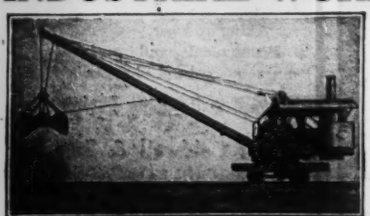

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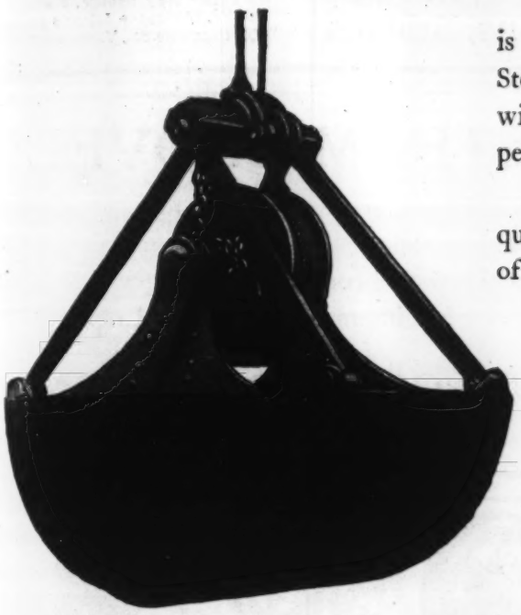

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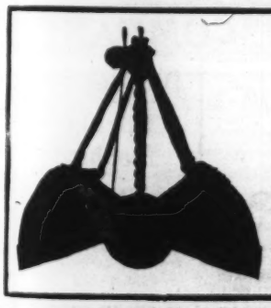

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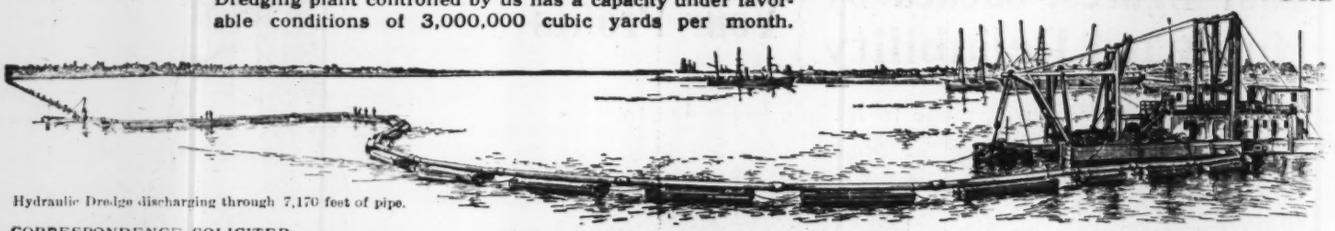

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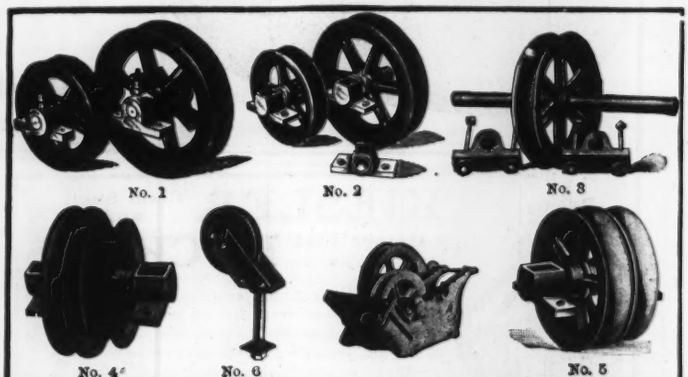

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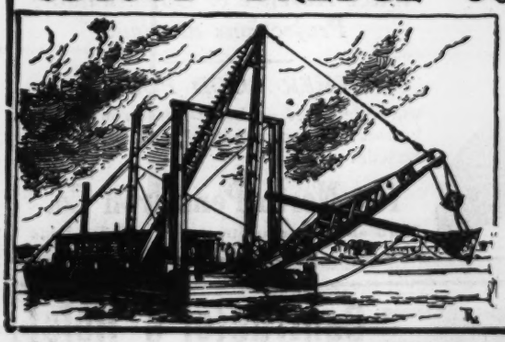

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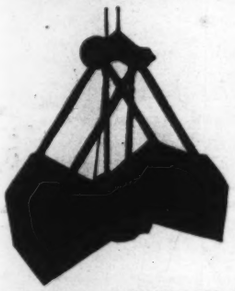

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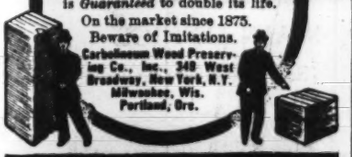

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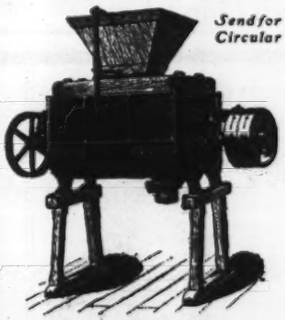

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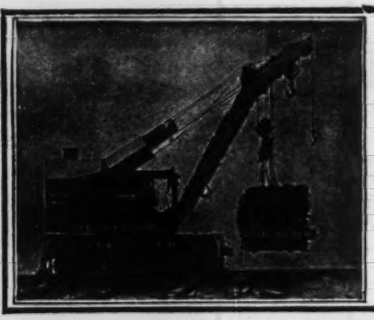

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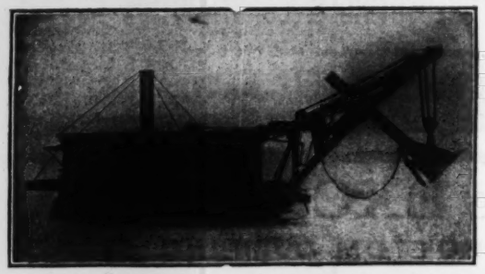

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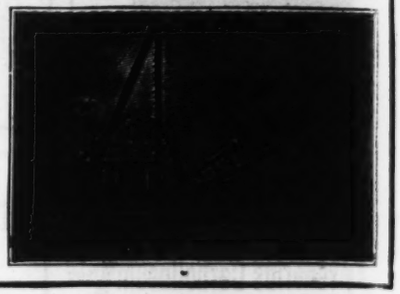

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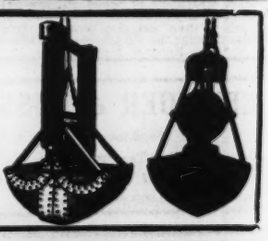
Also Dipper and Orange Peel Buckets

Blacksmiths, Machinists and Boilermakers



Hart Convertible CONSTRUCTION BALLAST and GONDOLA CAR

A Center-Dump, Side-Dump and Flat-Bottom Gondola—All in One

Diagonal shading shows position of ballast after being spread by the Rodger Distributing Car which follows the hopper cars

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22 Rose Street, New York
Established 1844.
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DIVING APPARATUS
Complete Stock of Dresses, Hose and Repair Sundries. Improved Bolt Helmet. All orders filled day received. Write for Our Prices.

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Established 1837
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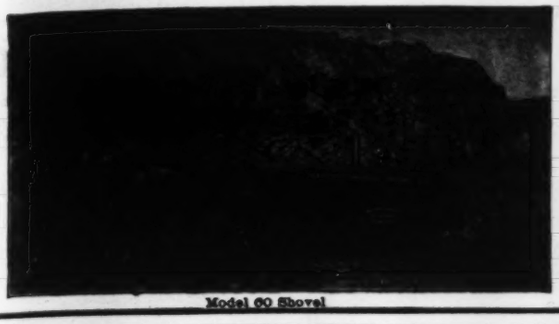
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We Manufacture Our Own Boilers, Chains. Also Steel and Gray Iron Castings Write Us Your Wants

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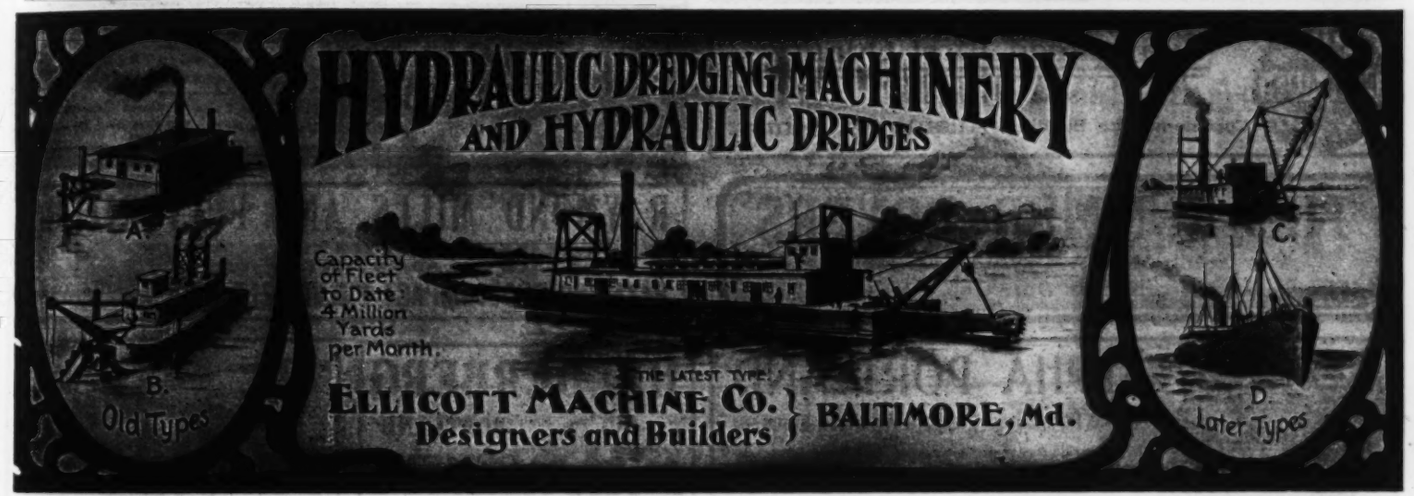

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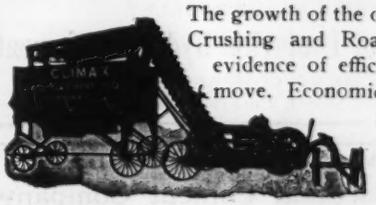

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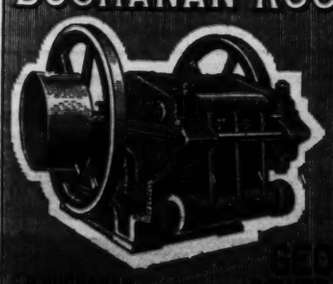

All Tensile Strains on Steel
Strongest Crusher Made
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Built in Eight Sizes from 7" x 10" to 24" x 36"
Daily Capacities from 50 to 1000 Tons
CRUSHING ROLLS
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The cost of crushing depends on the durability and efficiency of the machine. We would like to submit proofs to convince you that the Champion Crusher will do more work and last longer than any other machine made. Catalogue is free.

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"Neat tests are of less value than those of the briquettes made with sand and cement. The fineness of the cement is important, for the finer it is the more sand can be used with it."—

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For sidewalks and all other work requiring the Highest Quality Portland Cement

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The Recognized Standard American Brand

On the market for the past ten years. One brand only manufactured—a strictly straight Portland which in uniformity and general excellence cannot be equaled.

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High Tensile Strength
Uniform in Quality and Color

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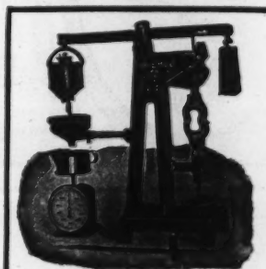

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Kosmos Portland Cement

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"Not Always the Cheapest, but Always the Best"
3,000 Barrels Daily, 1907
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Oldest American Cement
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OF EVERY TYPE
CONSTRUCTED FOR ALL PURPOSES
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WE MAKE THE LARGEST VARIETY IN THE WORLD. MORE THAN 200 NOW IN USE
NOW USED IN THE GOV. COAL TESTING PLANT. GOLD MEDAL AT ST. LOUIS
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DRYERS
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Symons Gyratory Crusher

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LOOK AT IT!

Half the Height, size for size, of other Gyratory Crushers.

Greater Crushing Area, hence ***Greater Capacity.***

Never Heats. Uses less oil. Wears longer.

Think of it, and write for Catalogue.

Twenty sold in April to users of other gyratory crushers.

Contractors' Supply and Equipment Co.

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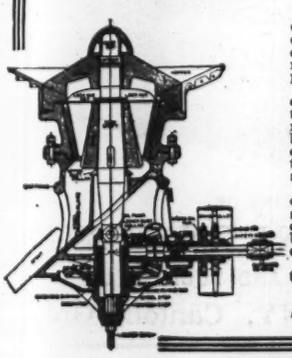
THE FEATURES OF SUPERIORITY

WHICH ESTABLISH THE SUPREMACY OF THE AUSTIN GYRATORY CRUSHER

Every **good feature** of every other gyratory crusher is embodied in the "Austin," but its superiority lies in **improvements** contained in no other crusher.



It has long double bearings supporting the counter-shaft on **both sides** of the pinion, insuring **permanent** alignment of the counter-shaft and **perfect** mesh of gear. All other crushers have a **single** bearing only and lose their alignment rapidly, resulting in the **breaking** of **teeth** or **gears** on pinion and drive gear.

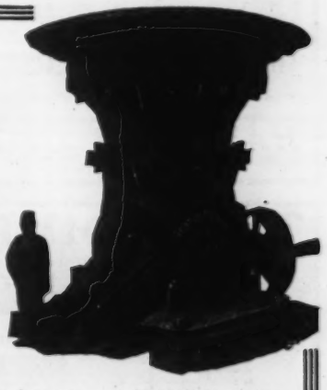
The enormous load, which in other crushers is sustained on the **bottom plate,** is in the "Austin" placed directly on the **main frame,** the largest, heaviest, strongest and most rigid part of the entire machine, exactly where it rightfully belongs. In all other crushers the eccentric bearing which carries the crushing strain and which imparts the motion to the machine, is supported by the **bottom plate,** which is simply attached to the main frame by **bolts.**

The "Austin" Crusher is equipped with an **automatic** oiling system operated by the gyratory motion of the **main shaft,** pumping a **constant** supply of live oil from an oil cellar through the **eccentric** and on all the bearings at the bottom of the crusher, insuring more **perfect** lubrication and, consequently, longer wear of bearings than any other crusher.

The gears are perfectly protected from dust by **two partitions** or **diaphragms** cast integral with the main frame, greatly adding to the strength of the crusher and protected from wear by removable steel bushings.

The lower diaphragm encloses **all** the working parts in the lower part of the crusher in an **absolutely dust-proof** chamber and reduces lost motion to the minimum.

The sides of the upper part of the crushing head are **vertical** to the extent of its upward adjustment, maintaining the **maximum** receiving opening when adjusted to any position. All other crushers have **conical** or wedge-shaped heads, **reducing** the size of the receiving opening when the head is adjusted upward.

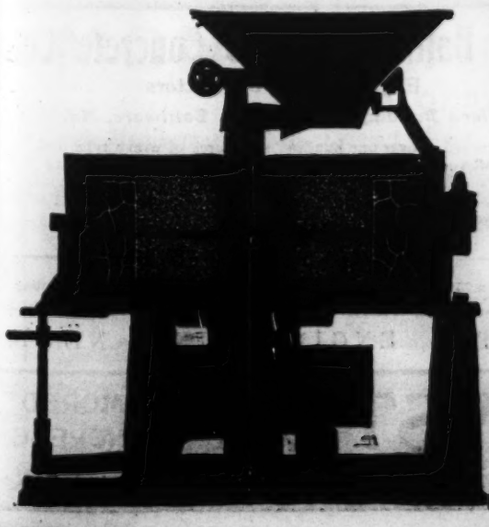


In normal position the shaft projects below the eccentric, affording a **full-bearing** surface when the shaft is adjusted upward to provide for wear on the head. It has the **greatest capacity** per horse-power, **easiest adjustments,** and is the **only automatically-lubricated** crusher made. Built in **eight sizes,** capacities from **40** to **2,000** tons per day.

We are the world's largest builders of rock and earth-handling machinery. Catalogues of all machines on request.

Austin Manufacturing Co., Chicago, U. S. A.

NEW YORK OFFICE, PARK ROW BLDG.



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FASTEST FINE GRINDERS BUILT

Turn out a Finished Product without Screens

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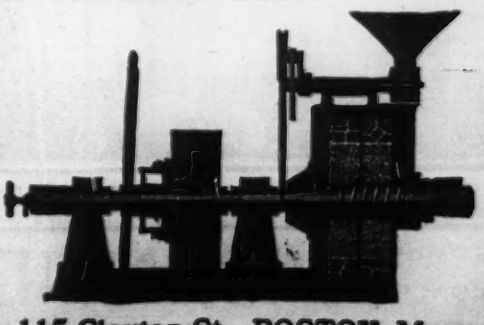
1-2 to 12 Tons Per Hour



We have 6 kinds of mills and can grind nearly everything

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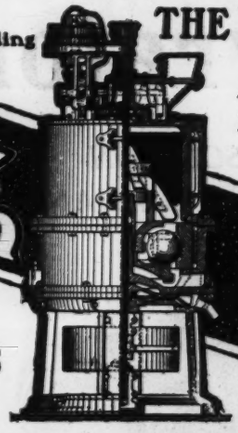
Better Fineness
Dustless
Grinding

Fuller-Lehigh Pulverizer Mill



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Four unattached balls do the pulverizing. They are readily replaced and do not wear rapidly. Entire mill can be dismantled and re-assembled in a very short time.

Greatest Output

"We have to say for your Fuller Mill, that it is unqualifiedly the best grinding device we have ever tried on our lime rock, and eminently satisfactory to us."

Lehigh Car, Wheel and Axle Works

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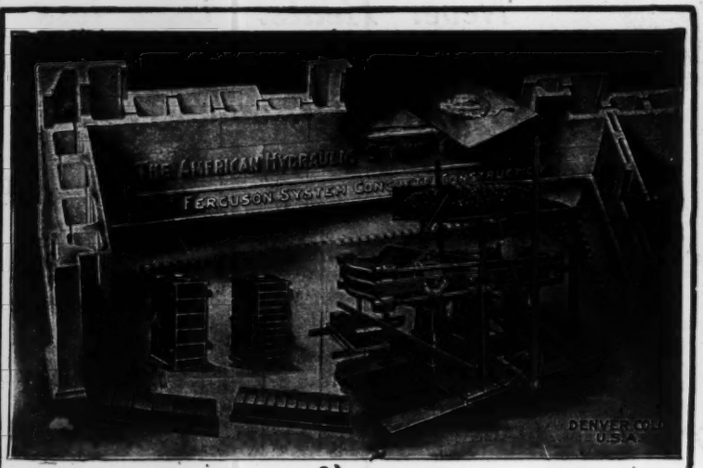

Two-piece Hollow Concrete Wall and Partition, containing Header Bond and Continuous Horizontal Air Space, Impervious to Heat, Cold, Moisture and Sound. Fire and Vermin Proof. Walls of all widths; blocks of all shapes and sizes. New Hand Press enables three men (mixture supplied) to make 1,200 blocks, 10,000 bricks or 5,000 paving blocks in ten hours. **The walls of a cottage are the work of a single day.** 80-page Catalog, fully illustrated, mailed upon request.

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Are Your Kilns Long Enough?

Why not increase your present capacity by lengthening your old ones? Possibly we can save you money; at any rate, asking us questions will cost you nothing.

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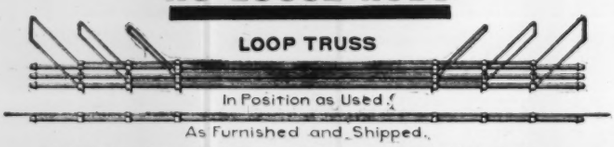
OF REINFORCED CONCRETE (PATENTED)

NO LOOSE RODS



NOTE—The Patent Chair Lock to rigidly support and hold rods in place.

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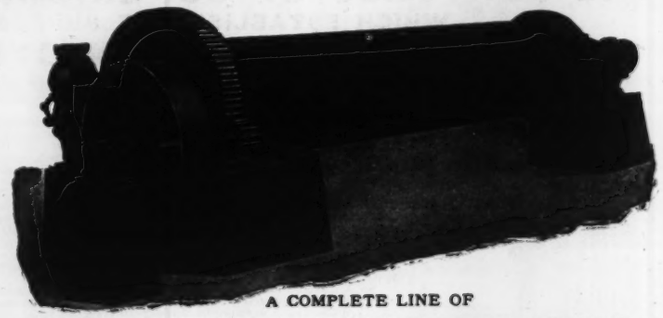

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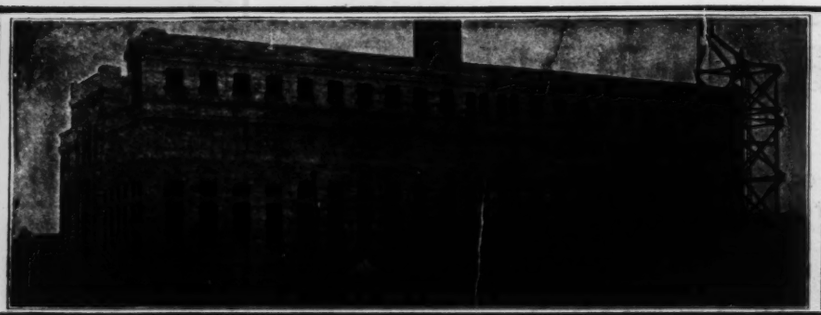
CEMENT MACHINERY FOR WET OR DRY PROCESS

ROTARY KILNS, BALL MILLS AND TUBE MILLS

THE BONNOT COMPANY, Canton, Ohio



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With a record of over one hundred structures of every type and an organization of five years' standing, we have set a standard for high-class reinforced concrete work. Our expert staff of engineers and long experience are at your service. Speed, consistent with perfect workmanship, our specialty.

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WESTPORT POWER HOUSE.

255 x 110 x 75 feet high. Ready for machinery four months after starting. Concrete throughout, walls, floors, columns, girders, coal and ash pockets, etc.

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SPECIALISTS IN CONCRETE-STEEL CONSTRUCTION FOR THE PAST 12 YEARS

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We Design Concrete-Steel Bridges

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CONCRETE-STEEL BRIDGE AT GRAND RAPIDS, MICH. THACHER SYSTEM.

Our New DIAMOND BAR FOR REINFORCING CONCRETE

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PROVIDES FOR A GREATER BOND THAN ANY OTHER BAR ON THE MARKET

Uniform and Continuous Bond all along the Bar — MAXIMUM EFFICIENCY ATTAINABLE

UNIFORM AREA OF SECTIONS — WRITE US FOR FULL INFORMATION — GREATEST ECONOMY POSSIBLE

OUR THACHER BARS ARE RELIABLE Can be supplied in any size and quantity

Tests have shown that they do not slip

"Hudson" Steel Bar for Reinforcing Concrete

TWISTED and PLAIN

Manufactured by The Rogers-Shear Company, Warren, Pa.

HIGH ELASTIC LIMIT *GREAT ULTIMATE STRENGTH* *DUCTILITY*

All sizes in stock at our stores for immediate delivery

HUDSON STRUCTURAL STEEL COMPANY

136th STREET and SOUTHERN BOULEVARD *NEW YORK*

MONOLITH STEEL COMPANY, INC.

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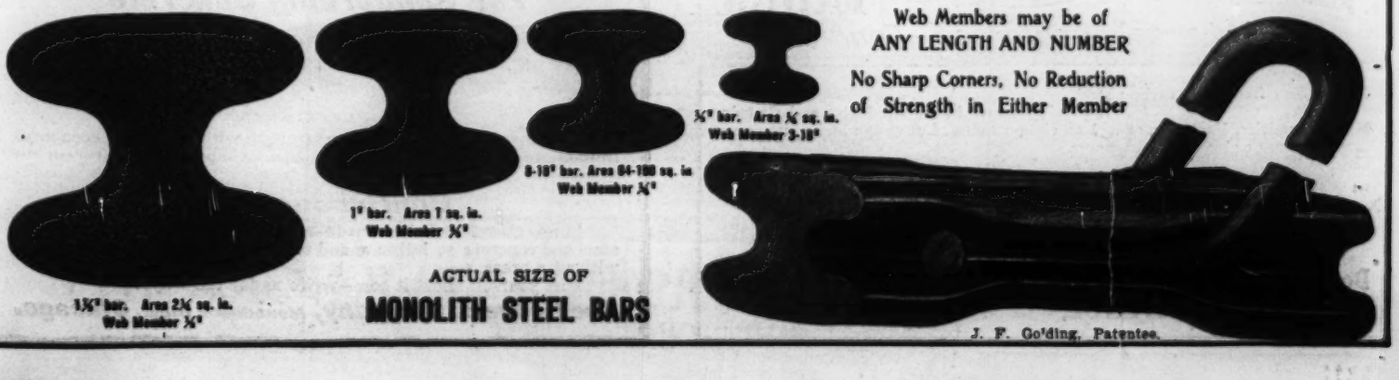
Web Members Attached, Lying Flat for Transportation

Adapted to Any Design of Concrete Construction

Web Members may be of ANY LENGTH AND NUMBER

No Sharp Corners, No Reduction of Strength in Either Member


1¾" bar. Area 2¼ sq. in. Web Member ½"
1" bar. Area 1 sq. in. Web Member ½"
⅝" bar. Area ⅝ sq. in. Web Member 3-16"
8-16" bar. Area 64-100 sq. in Web Member ½"

ACTUAL SIZE OF MONOLITH STEEL BARS

J. F. Golding, Patentee.

There is no doubt about the bonding properties of the

CORRUGATED BAR

Its square shoulders give a common sense, straightforward bond that impresses you with its strength.

You don't have a brain storm trying to figure out whether it twists before it wedges or wedges before it twists.

There is no excess metal; every ounce is available for tensile strength.

Recent bond tests indicate that, even with an imbedment of 24", plain bars begin to slip at a stress under 16,000 lbs. per square inch, while twisted bars slip at a stress under 37,000 lbs. per square inch.

CORRUGATED BARS did not slip till the stress was over 60,000 lbs. per square inch.

If you are interested in the permanence of your work this must interest you.

Expanded Metal and Corrugated Bar Co.

FRISCO BUILDING, ST. LOUIS

REPRESENTATIVES IN ALL LARGE CITIES

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THE MAXWELL TRUSSED BAR

for reinforcing concrete structures is a ***FULLY TRUSSED BAR,*** of any desired steel, which can be applied to all kinds of Architectural or Engineering Concrete Construction without departing from the original design of the bar.

This is ***THE NEW BAR*** in the field of reinforcement which combines the two essential qualities, ***STRENGTH AND ECONOMY.***

For particulars, address Dept. A,

AMERICAN CONCRETE STEEL COMPANY

Penobscot Building, Detroit, Mich.

LOCK-WOVEN STEEL FABRIC

THE Universal Reinforce FOR Concrete

Cold woven from high carbon steel.

Standard of merit in United States and Canada.

Mills, Foundries, Factories, etc. Full charge assumed of design and construction of large or small developments.

Used in Water Conduits, Storage Tanks, Drainage Canals, etc., etc.

Also the feature of our now celebrated "*Monocaste*" *Construction.*

Cost always within estimate. Address

W. N. WIGHT & CO.

Designing and Contracting Architects and Engineers

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High Elastic Limit

Twisted Steel Bars

For Reinforcing Concrete

Sizes 5-16 to 1 1-4 in.

Superior elasticity: **maximum strength with less steel—economy.** **Immediate shipment** from reserve stock at our mill. (Bars cut to length—no extra charge.)

Continuous Bond

In no other form of concrete reinforcing is the union between steel and concrete so intimate and tenacious (absolutely continuous—without a break.)

Post yourself about it now—write us for the whys.

The Rodgers Company, *Monadnock Bldg.,* ***Chicago.***

Heavy Floor Construction with Pin-connected Girder Frames and Cold Twisted Lug Bars. Paper Mill, Hamilton, O.

PIN-CONNECTED GIRDER FRAMES are sold in place in the forms. The cost of placing the steel in reinforced concrete work—heretofore a matter of speculation—is a known quantity when The General Fireproofing System is used. This is what we do:

Design the reinforcement, adapting our system to the layout of the Architect or Engineer, and sell the steel either f. o. b. Youngstown or in place in the forms.

Design the centering, and furnish Architect and Contractor with schedule of exact sizes of lumber.

In addition, when further co-operation of our engineering department is desired, we will design the concrete, furnish specifications, estimates of quantities and inspection.

The General Fireproofing Co. System of Reinforced Concrete

For Each Requirement a Specially Designed Material

Pin-connected Girder Frames
Expanded Metal
Herringbone Expanded Steel Lath
Boston Sheet Steel Lath
Cold Twisted Lug Bars
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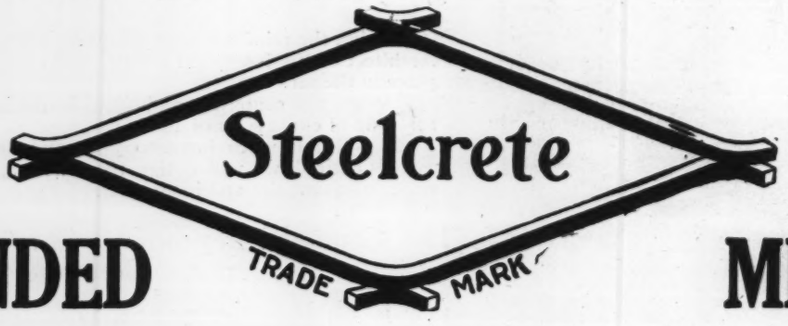

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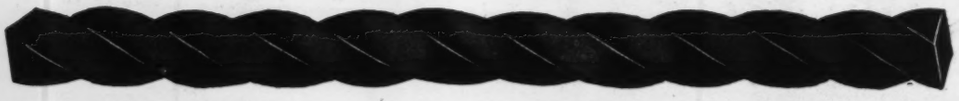

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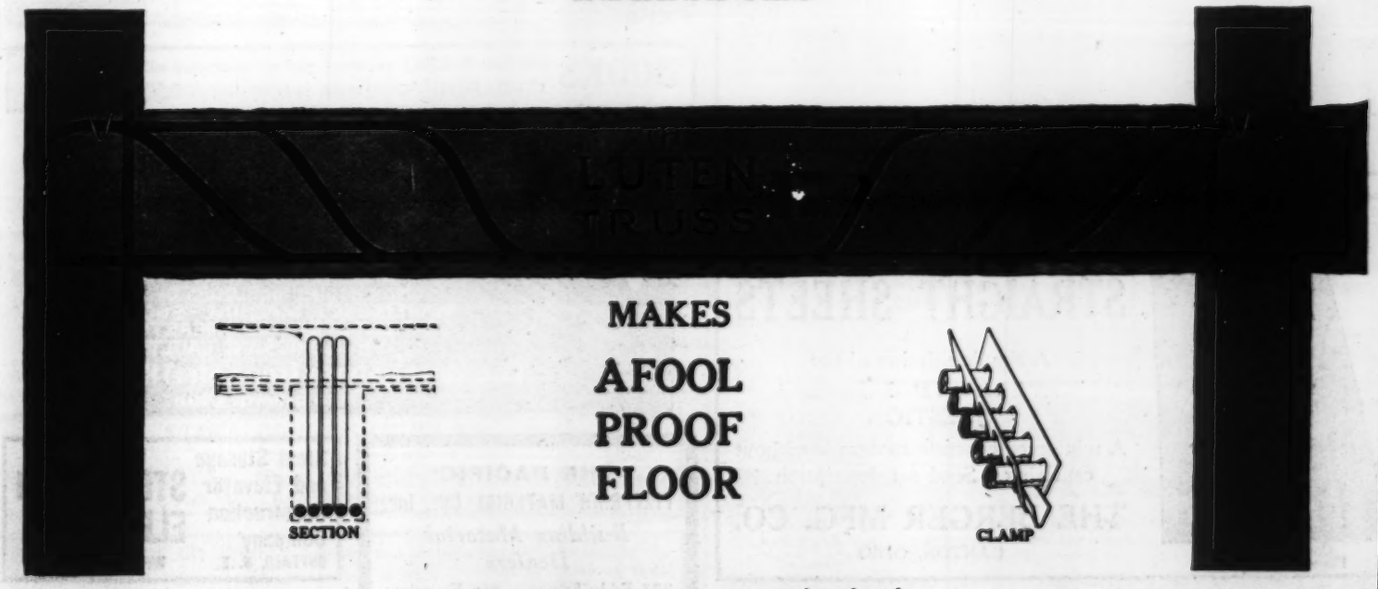

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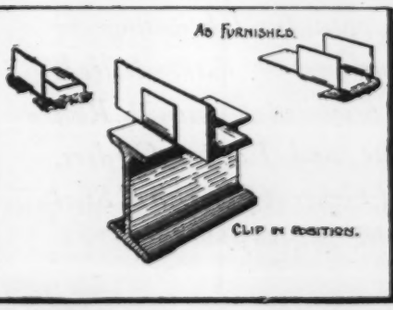

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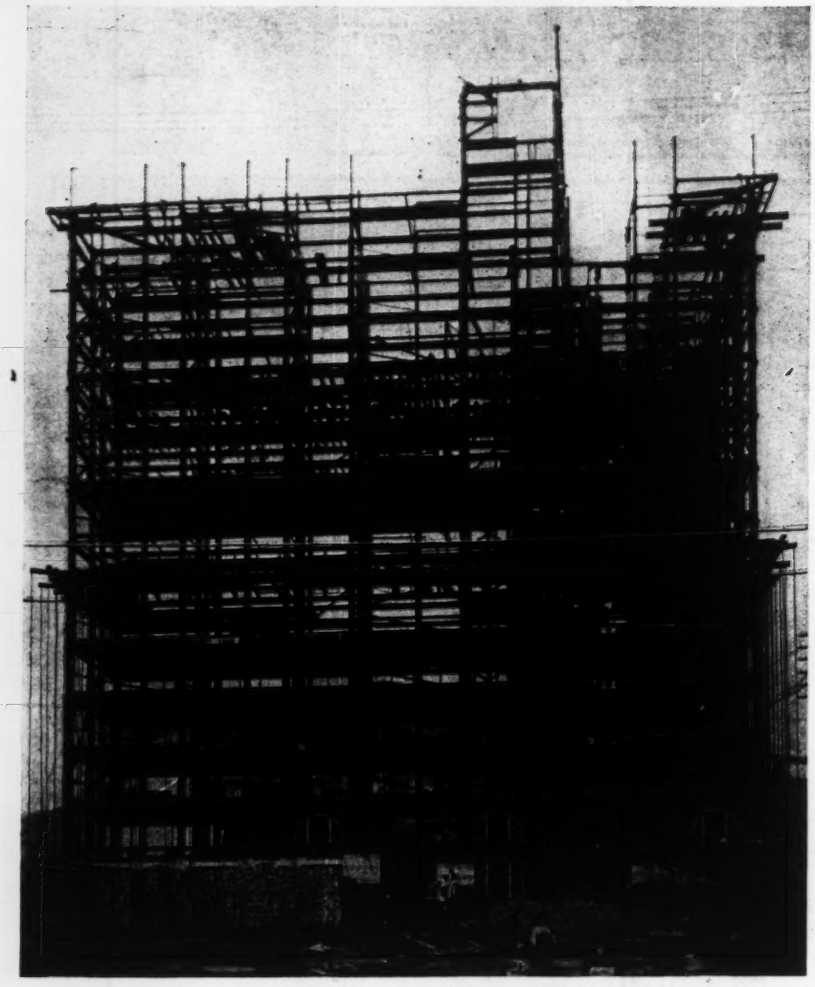

THE NEW WASHINGTON HOTEL IN COURSE OF CONSTRUCTION AT SEATTLE, WASH.

AMES & YOUNG
Architects, St. Louis

JAMES BLACK MASONRY & CONTRACTING CO.
General Contractors, St. Louis

The Clinton Fireproofing System—the System with the Continuous Bond—is being used throughout for reinforcing the floors and roof of this building.

Send for the new catalog of the Clinton Fireproofing System—the System with the Continuous Bond—of which Clinton Welded Wire forms an integral part.

Sweet's Index describes and illustrates the Clinton Fireproofing System—the System with the Continuous Bond—and its application.

The border is a photographic reproduction of a section of Clinton Welded Wire.

CLINTON WIRE CLOTH COMPANY
CLINTON, MASS.

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